

**Delaney, Paula**

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**From:** Webb, Allison  
**Sent:** Monday, January 7, 2019 5:45 PM  
**To:** Desrochers, Dale  
**Subject:** RE: Request for approval of sea lice and salmon research project

[REDACTED] so it's done and you can edit if you want, but I'm stepping back from this now.  
You're welcome ; )

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Desrochers, Dale <Dale.Desrochers@dfo-mpo.gc.ca>  
**Sent:** Monday, January 7, 2019 5:41 PM  
**To:** Webb, Cheryl <Cheryl.Webb@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>; Brown, Laura (Pacific) <Laura.L.Brown@dfo-mpo.gc.ca>  
**Cc:** Willis, David (Pacific) <David.Willis@dfo-mpo.gc.ca>  
**Subject:** Re: Request for approval of sea lice and salmon research project

Just seeing this, I can draft something tomorrow morning.

Dale

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** "Webb, Cheryl" <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>  
**Date:** 2019-01-07 1:51 PM (GMT-08:00)  
**To:** "Webb, Allison" <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>, "Desrochers, Dale" <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>, "Lowe, Carmel" <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>, "Brown, Laura (Pacific)" <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>  
**Cc:** "Willis, David (Pacific)" <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** RE: Request for approval of sea lice and salmon research project

s.19(1)

If someone is able to draft something, I think either Carmel or I can send...

s.21(1)(b)

Thanks, Cheryl

**From:** Webb, Allison  
**Sent:** Monday, January 7, 2019 1:35 PM  
**To:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel



<Carmel.Lowe@dfo-mpo.gc.ca>; Brown, Laura (Pacific) <Laura.L.Brown@dfo-mpo.gc.ca>

**Cc:** Willis, David (Pacific) <David.Willis@dfo-mpo.gc.ca>

**Subject:** RE: Request for approval of sea lice and salmon research project

Thanks Dale.

Would someone be willing to respond to [REDACTED] on behalf of DFO again as this is being raised with our Min? Andy has advised me that I should not do this as it doesn't pertain to aquaculture.

If I need to draft the email for someone else, I can. Just wanting to close the loop on this.

Thanks so much,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

s.16(2)(c)

Fisheries and Oceans Canada / Pêches et Océans Canada

s.19(1)

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

Allison.webb@dfo-mpo.gc.ca

**From:** Desrochers, Dale <Dale.Desrochers@dfo-mpo.gc.ca>

**Sent:** Friday, January 4, 2019 3:24 PM

**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Webb, Cheryl <Cheryl.Webb@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>; Brown, Laura (Pacific) <Laura.L.Brown@dfo-mpo.gc.ca>

**Cc:** Willis, David (Pacific) <David.Willis@dfo-mpo.gc.ca>

**Subject:** RE: Request for approval of sea lice and salmon research project

Attached you will find correspondence sent to [REDACTED], the first was sent October 16, 2017 and contains the referenced letter. The second was sent July 10, 2018 after a follow up meeting with [REDACTED] at South Coast.

*Dale Desrochers*

Section Head

Community Involvement / Resource Restoration

Salmonid Enhancement Program

South Coast Area

Office 250-754-0334

Cell [REDACTED]

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**Sent:** Thursday, January 3, 2019 3:21 PM

**To:** Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

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**Subject:** Re: Request for approval of sea lice and salmon research project

Yes a letter was provide, I can submit a copy when back in office tomorrow morning.

s.21(1)(a)

Dale

s.21(1)(b)

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**Cc:** "Desrochers, Dale" <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>, "Willis, David (Pacific)" <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>

**Subject:** RE: Request for approval of sea lice and salmon research project

I also support the positions outlined by Laura and Carmel.

Cheryl

**From:** Lowe, Carmel

**Sent:** Thursday, January 3, 2019 3:09 PM

**To:** Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

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**Subject:** RE: Request for approval of sea lice and salmon research project

Dale and Dave did reach out to Science for input on this and we too confirmed it is not a priority for our aquatic animal health program.

Laura - did Dale/Dave inform [REDACTED] that it is not a priority? [REDACTED]..

*Carmel*

Carmel Lowe, Ph.D.  
Regional Director Science | Directrice régionale des sciences  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Pacific Biological Station | Station biologique du Pacifique  
3190 Hammond Bay Rd, Nanaimo, BC, Canada V9T 6N7  
[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)  
Telephone | Téléphone 250-756-7177  
Facsimile | Télécopieur 250-729-8360  
Government of Canada | Gouvernement du Canada

**From:** Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>

**Sent:** January 3, 2019 9:24 AM

**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

**Cc:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>

**Subject:** RE: Request for approval of sea lice and salmon research project

Good morning,

Dave Willis and Dale Desrochers can provide some more detailed background on this. Please note that this proposal includes the Nanaimo River Hatchery which is one of our SEP CEDP hatcheries, supported by our SEP CIP/RRU funding.

The proponents of this proposal have repeatedly discussed this with DFO SEP staff, including Dave and Dale, who have briefed me. This proposal does not fit into our priorities for our program, nor does the hatchery have the capacity to ensure biosafety and biosecurity, hence the decision to not support it.

Unless something has significantly changed, I would still recommend not supporting this.

Laura

---

**Laura L. Brown, PhD**

Director, South Coast Area

Fisheries and Oceans Canada/Government of Canada

[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Cell: [REDACTED]

Directrice, secteur de la côte sud

Pêches et Océans Canada/Gouvernement du Canada

[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Tél. cell.: [REDACTED]

---

**From:** Webb, Allison

**Sent:** 2019-January-02 5:25 PM

**To:** Lowe, Carmel; Webb, Cheryl

**Cc:** Brown, Laura (Pacific)

**Subject:** FW: Request for approval of sea lice and salmon research project

s.16(2)(c)

s.19(1)

s.21(1)(a)

s.21(1)(b)

Carmel or Cheryl – Would you be willing to take the lead on responding to this as it's not really in the AMD square? Andy mentioned [REDACTED] I told him that I'd been in contact with them 2X and they understood that they would need to wait until after the holidays to get a response.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

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604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

From: [REDACTED]

Sent: Sunday, December 30, 2018 6:04 PM

To: Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

Subject: Re: Request for approval of sea lice and salmon research project

Dear Allison,

Thank you very much for the follow-up message. The holiday period is definitely a tough time to get things done! We look forward to hearing from you in the new year.

Best regards,

[REDACTED]

On Thu, 27 Dec 2018 at 18:02, Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)> wrote:

[REDACTED] – Unfortunately due to Xmas holidays, I was not able to discuss this with my colleagues. A response will not be forthcoming until the New Year.

Regards,  
Allison

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

s.19(1)

Fisheries and Oceans Canada / Pêches et Océans Canada

s.21(1)(a)

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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** [REDACTED]

**Sent:** Thursday, December 6, 2018 1:48 PM

**To:** Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

**Cc:** Whelan, Christie <[Christie.Whehan@dfo-mpo.gc.ca](mailto:Christie.Whehan@dfo-mpo.gc.ca)>

**Subject:** Request for approval of sea lice and salmon research project

Dear Carmel Lowe, Allison Webb, and Cheryl Webb,  
(cc Christie Whelan)

I am writing to you to request approval for a scientific research project that several colleagues and I seek to implement in Nanaimo. The proposed project would experimentally test whether protecting juvenile pink salmon from parasitic sea lice increases their marine survival. For the past 18 months, we have sought DFO approval to operate this project out of the Nanaimo River Hatchery. After the relevant managers declined to give approval for the project, Christie Whelan (cc'ed) recommended that we write directly to you and request approval.

Please find attached our letter, which outlines the proposed project, its local support, and how it aligns with Department objectives and the Minister's mandate letter. Also attached is a more detailed proposal and budget, in which you will find we request no financial or personnel support from DFO – just the in-kind access to the hatchery.

We thank you for your consideration and look forward to your response.

Sincerely,

[REDACTED]

s.19(1)

## **Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Monday, January 7, 2019 5:49 PM  
**To:** Webb, Cheryl  
**Subject:** RE: Request for approval of sea lice and salmon research project

Tx you for agreeing to send it.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
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**Subject:** Re: Request for approval of sea lice and salmon research project

Thank you so much Allison!

Sent from my Bell Samsung device over Canada's largest network.

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**Subject:** FW: Request for approval of sea lice and salmon research project

Draft email to be sent to [REDACTED] by Cheryl Webb ... I attached the original letter, but not Dale's email for your info only or in case you want to forward it.

You may wish to edit ... Tx. I'm stepping back now.

s.19(1)



I am following up from your email of December 6, 2018 in which you were seeking support from DFO to undertake a scientific research project at the Nanaimo River hatchery on sea lice. As you noted in your email, DFO staff met with you to discuss this proposal and were not able to support this work for the reasons explained in correspondence which was sent to you on October 16, 2017 and July 10, 2018.

This has been reviewed again at your request at the senior management level in DFO Pacific Region and I regret to inform you that our position has not changed. While you noted that you were willing to limit DFO's involvement in this project, any work that is conducted at the hatchery requires a minimum of oversight to ensure proper safe work procedures, and biosecurity protocols to be in place. At this time, given this and as this work is not a priority for our Salmonid Enhancement Program, we are unable to dedicate any resources to supporting this research.

We understand that there is merit in this research and wish you well in finding a more suitable location to undertake this work.

Regards,

Cheryl Webb, Regional Director  
Ecosystems Management Branch

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

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Section Head

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South Coast Area

Office 250-754-0334

Cell [REDACTED]

s.16(2)(c)

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Cheryl

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Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

Cc: Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>

Subject: RE: Request for approval of sea lice and salmon research project

Dale and Dave did reach out to Science for input on this and we too confirmed it is not a priority for our aquatic animal health program.

Laura - did Dale/Dave inform [REDACTED] that it is not a priority? [REDACTED].

*Carmel*

Carmel Lowe, Ph.D.

Regional Director Science | Directrice régionale des sciences

Fisheries and Oceans Canada | Pêches et Océans Canada

Pacific Biological Station | Station biologique du Pacifique

3190 Hammond Bay Rd, Nanaimo, BC, Canada V9T 6N7

[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)

Telephone | Téléphone 250-756-7177

Facsimile | Télécopieur 250-729-8360

Government of Canada | Gouvernement du Canada

From: Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>

Sent: January 3, 2019 9:24 AM

To: Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

Cc: Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>

Subject: RE: Request for approval of sea lice and salmon research project

Good morning,

Dave Willis and Dale Desrochers can provide some more detailed background on this. Please note that this proposal includes the Nanaimo River Hatchery which is one of our SEP CEDP hatcheries, supported by our SEP CIP/RRU funding.

The proponents of this proposal have repeatedly discussed this with DFO SEP staff, including Dave and Dale, who have briefed me. This proposal does not fit into our priorities for our program, nor does the hatchery have the capacity to ensure biosafety and biosecurity, hence the decision to not support it.

Unless something has significantly changed, I would still recommend not supporting this.

Laura

s.16(2)(c)

s.19(1)

s.21(1)(a)

s.21(1)(b)

**Laura L. Brown, PhD**

Director, South Coast Area

Fisheries and Oceans Canada/Government of Canada

[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Cell: [REDACTED]

Directrice, secteur de la côte sud

Pêches et Océans Canada/Gouvernement du Canada

[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Tél. cell.: [REDACTED]

From: Webb, Allison

Sent: 2019-January-02 5:25 PM

To: Lowe, Carmel; Webb, Cheryl

**Cc:** Brown, Laura (Pacific)

**Subject:** FW: Request for approval of sea lice and salmon research project

Carmel or Cheryl – Would you be willing to take the lead on responding to this as it's not really in the AMD square? Andy mentioned [REDACTED] I told him that I'd been in contact with them 2X and they understood that they would need to wait until after the holidays to get a response.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** [REDACTED]

**Sent:** Sunday, December 30, 2018 6:04 PM

**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Subject:** Re: Request for approval of sea lice and salmon research project

Dear Allison,

Thank you very much for the follow-up message. The holiday period is definitely a tough time to get things done! We look forward to hearing from you in the new year.

Best regards,  
[REDACTED]

On Thu, 27 Dec 2018 at 18:02, Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)> wrote:

[REDACTED] – Unfortunately due to Xmas holidays, I was not able to discuss this with my colleagues. A response will not be forthcoming until the New Year.

Regards,  
Allison

s.19(1)

s.21(1)(a)

s.21(1)(b)

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

**Allison.webb@dfo-mpo.gc.ca**

**From:** [REDACTED]

**Sent:** Thursday, December 6, 2018 1:48 PM

**To:** Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

**Cc:** Whelan, Christie <[Christie.Whehan@dfo-mpo.gc.ca](mailto:Christie.Whehan@dfo-mpo.gc.ca)>

**Subject:** Request for approval of sea lice and salmon research project

Dear Carmel Lowe, Allison Webb, and Cheryl Webb,  
(cc Christie Whelan)

I am writing to you to request approval for a scientific research project that several colleagues and I seek to implement in Nanaimo. The proposed project would experimentally test whether protecting juvenile pink salmon from parasitic sea lice increases their marine survival. For the past 18 months, we have sought DFO approval to operate this project out of the Nanaimo River Hatchery. After the relevant managers declined to give approval for the project, Christie Whelan (cc'ed) recommended that we write directly to you and request approval.

Please find attached our letter, which outlines the proposed project, its local support, and how it aligns with Department objectives and the Minister's mandate letter. Also attached is a more detailed proposal and budget, in which you will find we request no financial or personnel support from DFO – just the in-kind access to the hatchery.

We thank you for your consideration and look forward to your response.

Sincerely,

[REDACTED]

s.19(1)

## **Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Tuesday, January 8, 2019 2:47 PM  
**To:** Moore, Wayne  
**Cc:** Parsons, Jay; Charbonneau, France; McGill, Stephanie; Webb, Cheryl; Brown, Laura (Pacific); Lowe, Carmel  
**Subject:** FW: Request for approval of sea lice and salmon research project  
**Attachments:** Nanaimo River Experimental Release Project.pdf

Wayne – Fine with your response and just by coincidence in terms of timing, Cheryl sent a response to [REDACTED] this am that was basically as below (I deleted the final so can't send it), but thought that you might want to take a look just to ensure that we aligned before sending.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Webb, Allison  
**Sent:** Monday, January 7, 2019 5:44 PM  
**To:** Desrochers, Dale <Dale.Desrochers@dfo-mpo.gc.ca>; Brown, Laura (Pacific) <Laura.L.Brown@dfo-mpo.gc.ca>; Webb, Cheryl <Cheryl.Webb@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>  
**Subject:** FW: Request for approval of sea lice and salmon research project

Draft email to be sent to [REDACTED] by Cheryl Webb ... I attached the original letter, but not Dale's email for your info only or in case you want to forward it.

You may wish to edit ... Tx. I'm stepping back now.

---

[REDACTED]

I am following up from your email of December 6, 2018 in which you were seeking support from DFO to undertake a scientific research project at the Nanaimo River hatchery on sea lice. As you noted in your email, DFO staff met with you to discuss this proposal and were not able to support this work for the reasons explained in correspondence which was sent to you on October 16, 2017 and July 10, 2018.

This has been reviewed again at your request at the senior management level in DFO Pacific Region and I regret to inform you that our position has not changed. While you noted that you were willing to limit DFO's involvement in this project, any work that is conducted at the hatchery requires a minimum of oversight to ensure proper safe work procedures, and biosecurity protocols to be in place. At this time, given this and as this work is not a priority for our Salmonid Enhancement Program, we are unable to dedicate any resources to supporting this research.

We understand that there is merit in this research and wish you well in finding a more suitable location to undertake this work.

Regards,

Cheryl Webb, Regional Director  
Ecosystems Management Branch

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>  
**Sent:** Friday, January 4, 2019 3:24 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>  
**Cc:** Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** RE: Request for approval of sea lice and salmon research project

Attached you will find correspondence sent to [REDACTED] the first was sent October 16, 2017 and contains the referenced letter. The second was sent July 10, 2018 after a follow up meeting with [REDACTED] at South Coast.

*Dale Desrochers*

Section Head  
Community Involvement / Resource Restoration  
Salmonid Enhancement Program  
South Coast Area  
Office 250-754-0334  
Cell [REDACTED]

s.16(2)(c)  
s.19(1)  
s.21(1)(a)  
s.21(1)(b)

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Friday, January 4, 2019 3:01 PM  
**To:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>  
**Cc:** Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** RE: Request for approval of sea lice and salmon research project

Hi – Be good to get this letter and then have a senior manager follow up with them again [REDACTED]

[REDACTED] I think that an email would suffice including the letter as a reminder as well.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>  
**Sent:** Thursday, January 3, 2019 3:21 PM  
**To:** Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** Re: Request for approval of sea lice and salmon research project

Yes a letter was provide, I can submit a copy when back in office tomorrow morning.

Dale

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----


**From:** "Webb, Cheryl" <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>  
**Date:** 2019-01-03 3:10 PM (GMT-08:00)  
**To:** "Lowe, Carmel" <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>, "Brown, Laura (Pacific)" <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>, "Webb, Allison" <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** "Desrochers, Dale" <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>, "Willis, David (Pacific)" <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** RE: Request for approval of sea lice and salmon research project

I also support the positions outlined by Laura and Carmel.

Cheryl

**From:** Lowe, Carmel  
**Sent:** Thursday, January 3, 2019 3:09 PM  
**To:** Brown, Laura (Pacific) <[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>  
**Cc:** Desrochers, Dale <[Dale.Desrochers@dfo-mpo.gc.ca](mailto:Dale.Desrochers@dfo-mpo.gc.ca)>; Willis, David (Pacific) <[David.Willis@dfo-mpo.gc.ca](mailto:David.Willis@dfo-mpo.gc.ca)>  
**Subject:** RE: Request for approval of sea lice and salmon research project

Dale and Dave did reach out to Science for input on this and we too confirmed it is not a priority for our aquatic animal health program.

Laura - did Dale/Dave inform  that it is not a priority? If yes, I don't understand why they are continuing to ask.....

*Carmel*

Carmel Lowe, Ph.D.  
Regional Director Science | Directrice régionale des sciences  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Pacific Biological Station | Station biologique du Pacifique  
3190 Hammond Bay Rd, Nanaimo, BC, Canada V9T 6N7

s.19(1)

[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)  
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**Subject:** RE: Request for approval of sea lice and salmon research project

Good morning,  
Dave Willis and Dale Desrochers can provide some more detailed background on this. Please note that this proposal includes the Nanaimo River Hatchery which is one of our SEP CEDP hatcheries, supported by our SEP CIP/RRU funding.

The proponents of this proposal have repeatedly discussed this with DFO SEP staff, including Dave and Dale, who have briefed me. This proposal does not fit into our priorities for our program, nor does the hatchery have the capacity to ensure biosafety and biosecurity, hence the decision to not support it.

Unless something has significantly changed, I would still recommend not supporting this.

Laura

---

**Laura L. Brown, PhD**

Director, South Coast Area  
Fisheries and Oceans Canada/Government of Canada  
[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Cell: [REDACTED]  
Directrice, secteur de la côte sud  
Pêches et Océans Canada/Gouvernement du Canada  
[Laura.L.Brown@dfo-mpo.gc.ca](mailto:Laura.L.Brown@dfo-mpo.gc.ca) Tel: 250 756-7280/Tél. cell.: [REDACTED]

---

**From:** Webb, Allison  
**Sent:** 2019-January-02 5:25 PM  
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**Cc:** Brown, Laura (Pacific)  
**Subject:** FW: Request for approval of sea lice and salmon research project

Carmel or Cheryl – Would you be willing to take the lead on responding to this as it's not really in the AMD square? Andy mentioned [REDACTED] I told him that I'd been in contact with them 2X and they understood that they would need to wait until after the holidays to get a response.

Thanks,  
Allison

s.16(2)(c)

s.21(1)(a)

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

s.21(1)(b)

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

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**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Subject:** Re: Request for approval of sea lice and salmon research project

Dear Allison,

Thank you very much for the follow-up message. The holiday period is definitely a tough time to get things done! We look forward to hearing from you in the new year.

Best regards,

- [REDACTED]

On Thu, 27 Dec 2018 at 18:02, Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)> wrote:

[REDACTED] - Unfortunately due to Xmas holidays, I was not able to discuss this with my colleagues. A response will not be forthcoming until the New Year.

Regards,

Allison

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

s.19(1)

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** [REDACTED]

**Sent:** Thursday, December 6, 2018 1:48 PM

**To:** Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Webb, Cheryl <[Cheryl.Webb@dfo-mpo.gc.ca](mailto:Cheryl.Webb@dfo-mpo.gc.ca)>

**Cc:** Whelan, Christie <[Christie.Whelan@dfo-mpo.gc.ca](mailto:Christie.Whelan@dfo-mpo.gc.ca)>

**Subject:** Request for approval of sea lice and salmon research project

Dear Carmel Lowe, Allison Webb, and Cheryl Webb,  
(cc Christie Whelan)

I am writing to you to request approval for a scientific research project that several colleagues and I seek to implement in Nanaimo. The proposed project would experimentally test whether protecting juvenile pink salmon from parasitic sea lice increases their marine survival. For the past 18 months, we have sought DFO

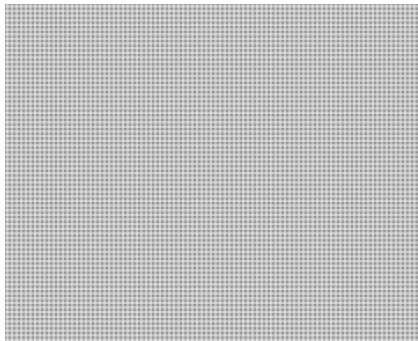


approval to operate this project out of the Nanaimo River Hatchery. After the relevant managers declined to give approval for the project, Christie Whelan (cc'ed) recommended that we write directly to you and request approval.

Please find attached our letter, which outlines the proposed project, its local support, and how it aligns with Department objectives and the Minister's mandate letter. Also attached is a more detailed proposal and budget, in which you will find we request no financial or personnel support from DFO – just the in-kind access to the hatchery.

We thank you for your consideration and look forward to your response.

Sincerely,



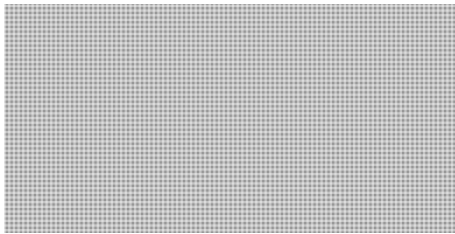
s.19(1)



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

October 16, 2017



Thank you for meeting with Fisheries and Oceans Canada, Salmonid Enhancement (DFO SEP) staff on July 13<sup>th</sup>, 2017 to discuss your experimental design to test the effect of early sea lice protection on the recruitment of pink salmon in southern British Columbia.

During the meeting, the life history of Nanaimo pink salmon, current population health and enhancement release strategies were discussed. Logistical information was provided by Brian Banks, Nanaimo River Hatchery Manager, on operations and infrastructure related to their existing pink enhancement program. You also indicated through your email of October 10, 2017 that both the Snuneymuxw First Nation and the Nanaimo River Hatchery have indicated support for this project to move forward.

As indicated at the time of our meeting, DFO SEP would need to conduct an internal review of this proposal to better understand any concerns that may need to be considered. In this regard, our review indicated that the proposal does not align well with the principles of the Salmonid Enhancement Program, specifically conducting enhancements of salmon species in a manner and fashion that do not require the use of early protection to sea lice. As you are aware, all of DFO SEP enhancement operations are licensed under the Pacific Aquaculture Regulations which details activities that are approved to be undertaken at each facility and in accordance with best management practices. It is based on concerns identified by DFO's veterinarian regarding treatments in net pens open to the marine environment, and the perception that DFO SEP enhancements may require treatment from sea lice to be considered viable, that we cannot provide you formal support for this experiment at this time.

If you have any questions, or wish to discuss this further, please don't hesitate to call David Willis, Erica Blake or myself.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Dale Desrochers".

Dale Desrochers  
South Coast Area Section Head  
Community Involvement and Resource Restoration  
Salmonid Enhancement Program  
Telephone: 250-756-7122

s.19(1)

**Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Monday, February 4, 2019 1:21 PM  
**To:** Fenton, AJ  
**Subject:** RE: Picture for Data management slide

Can you find one on our fish health reporting for me? Sea lice data or disease data? That would be awesome! Tx so much.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fenton, AJ <AJ.Fenton@dfo-mpo.gc.ca>  
**Sent:** Monday, February 4, 2019 1:20 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** RE: Picture for Data management slide

Cool here is a screenshot of the open data website but it might be a bit busy (and textual)



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# Open Government Portal

## Search Records

aquaculture activities report

25 records found

Order by Relevance

Fisheries and Oceans Canada ✕

### National Aquaculture Public Reporting Data

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Sent:** February 4, 2019 13:14

**To:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>

**Subject:** RE: Picture for Data management slide

That's great thanks. Just need to find something on public reporting now ...

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>

**Sent:** Monday, February 4, 2019 1:12 PM

**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Cc:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>

**Subject:** Picture for Data management slide

Hi Allison, here's what I could come up with. Let me know if this works or if you would like us to send something different. I was considering having a few options but then only ended up with 1 hence the name "option 1".

Thanks ;)

**A.J. Fenton**

Data Systems Coordinator, Aquaculture Programs  
Fisheries and Oceans Canada, Pacific Region  
[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca) / Tel: 604-666-9364

Coordinateur de systèmes de données, programmes d'aquaculture  
Pêches et Océans Canada, région du Pacifique  
[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca) / Tél. : 604-666-9364



Government  
of Canada

Gouvernement  
du Canada

Canada

No information has been removed or severed from this page

**Delaney, Paula**

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**From:** Webb, Allison  
**Sent:** Friday, February 8, 2019 2:07 PM  
**To:** Paylor, Adrienne  
**Subject:** RE: Ottawa PARR meeting??

Ok rewriting COL for sea lice wasn't critical today or time sensitive and a bit premature in my mind

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Friday, February 8, 2019 2:03 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Re: Ottawa PARR meeting??

I had to many meetings to stay way today :) I am in the boardroom with FH & Bernie rewriting the sea lice conditions :) I will tell the girls we will let them know on Monday (I have the money to send them so more of a numbers thing right?)

Sent from my BlackBerry 10 smartphone on the Rogers network.

---

**From:** Webb, Allison  
**Sent:** Friday, February 8, 2019 1:56 PM  
**To:** Paylor, Adrienne  
**Subject:** RE: Ottawa PARR meeting??

Let's chat about this. I think 3 of us is too much given that we haven't budgeted for this. Let's follow up on Monday when you're back. Call me if I forget! It's a bit crazy at this point here ; )

Hope you're enjoying the day off. Better to be out of the storm!

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)

**From:** Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Sent:** Friday, February 8, 2019 10:18 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** Ottawa PARR meeting??

I keep meaning to confirm with you that do want Sarha & Kerra with you in ottawa the last week of Feb? The girls keep asking me if they should plan for this :) thx

Sent from my BlackBerry 10 smartphone on the Rogers network.

#### Sea lice Summary from Fish Health and Sea lice audits

- 30 DFO sea lice audits have been completed to date in 2019
- Thus far only one of the 30 audits has shown sea lice levels over threshold, this was reported to DFO and this farm has since been harvested out.
- DFO was conducting sea lice audits in the Esperanza/Nootka area last week but due to environmental issues was not able to conduct the scheduled sea lice audits at the esperanza site, these will be re scheduled for June. Records and observation as well as counts from fish being harvested in the Esperanza area (zone 2.4) indicate *L.salmonis* motile lice levels are over threshold during the outmigration period. The company is currently controlling lice levels with harvest and hydrogen peroxide treatments. The DFO veterinarian is in close communications with the industry veterinarian.



**Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Friday, February 22, 2019 7:03 PM  
**To:** Burgetz, Ingrid  
**Cc:** Patirana, Anoma; Paylor, Adrienne  
**Subject:** Presentations from Pac Region for PARR Meeting  
**Attachments:** ABAM presentation for PARR meeting\_Feb\_2019.ppt; Presentation to PARR Annual Science Meeting\_Feb\_2019.pptx

Hi Ingrid – Here are my presentations for the meeting on Tues in case you need to load them up.

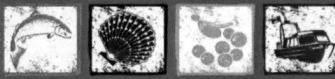
I might get Anoma to add one slide to my ABM presentation to show some info re farms and sea lice, but otherwise, these are good to go.

I'm on the plane most of Monday, but will see you on Tues. If Anoma is able to make the one change, she'll email the updated version to you directly.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

7/10/2019

**AQUACULTURE  
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## An Area Based Approach to Aquaculture Management in Canada

*Presentation to PARR Meeting  
Ottawa Feb 26, 2019*

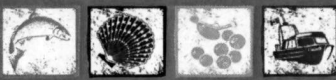
Ensuring Sustainable Fisheries

1

## What is ABAM?

Working definition:

“An approach to aquaculture management that ensures planning and management occur at the best geographic scale, in partnership with Indigenous groups, governments, and the aquaculture industry.”

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## Why Area Based Management now?

- Aligns with DFO Minister's mandate letter (to develop new innovative approaches to modernize aquaculture ...long term sustainability of Canada's Oceans economy);
- Recognition that as a regulator, DFO should be analysing more elements of risk and performance at a broader scale and adapting management responses to better reflect industry performance (increase application of Precautionary Approach and Performance-Based Management);
- Indigenous partners have shown a strong interest in increased involvement in Aquaculture planning, monitoring, and management (supports federal GoC Reconciliation approach & UNDRIP);
- Aligns with *Oceans Act* priorities related to Integrated Oceans Management and Integrated Fisheries Management;
- Responds to Government of BC approach (endorsement of MAACFA and LOU process in the Broughton Archipelago).



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## What will ABAM do?

Area Based Aquaculture Management will:

- Allow better **understanding of and response to risks** associated with aquaculture activities at scales that consider connectivity and cumulative impacts;
- Align broader government objectives to **ensure operational planning and management is responsive to the characteristics** of a particular areas;
- **Support environmental protection and/or industry growth** at appropriate scales;
- Establish **management objectives and measure performance** at scales that better align with the interests of Indigenous groups, Industry and stakeholders;
- **Improve engagement of Indigenous communities** in communication about performance, operational management, and potentially governance.



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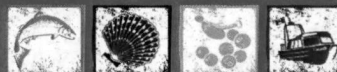
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## How will Areas be established?

Areas will reflect the following elements:

- Environmental (connectivity, cumulative impacts/risk, local environmental characteristics)
- Indigenous interest (governance, capacity, traditional knowledge and use of resources)
- Industry (sectors, ownership, distribution, density)
- Management (feasibility, cost, logistics, support)

The approach must enhance the management of the industry and involvement of Indigenous peoples.



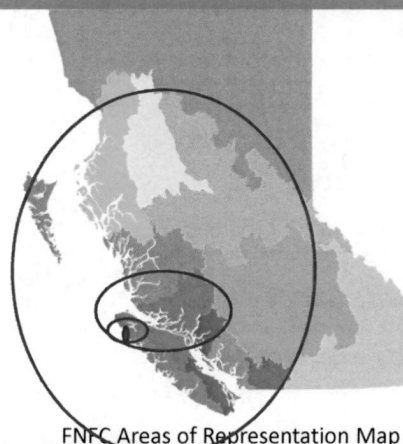
**AQUACULTURE  
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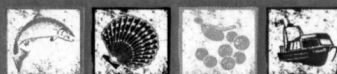
## How can Areas be developed?

<b>Licence/ Farm</b>	• Individual licence: eg. Mahatta West
<b>Sub-Bay or Bay Area</b>	• Ecosystem unit: Quatsino Sound
<b>Management Area</b>	• Northern Vancouver Island/ Kwakwaka'wakw Nations
<b>Pacific Region</b>	• Pacific Region
<b>National</b>	• Canada

DFO has historically focused our management approach at the Licence/Farm level.



FNFC Areas of Representation Map



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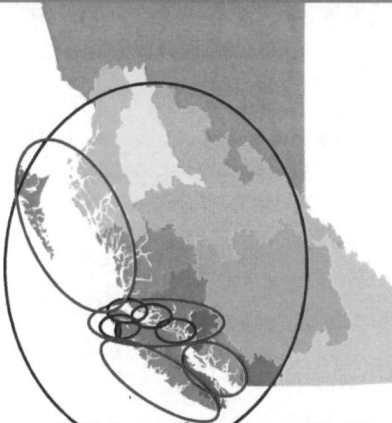
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## How can Areas be developed?





Bay Areas (e.g. Quatsino Sound, Queen Charlotte Strait, Broughton Archipelago, Discovery Islands) could feed into

↓

Area-Based Aquaculture Management Areas (e.g.: Central/North Coast; West Coast Vancouver Island; Georgia Strait/Salish Sea; Northern Vancouver Island)



FNFC Areas of Representation Map










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## Area Management Scales

<b>Licence/ Farm</b>	<ul style="list-style-type: none"> <li>• Work directly with federal/provincial governments and Industry on issues with localized implications through Conditions of Licence including mitigation measures (benthic, marine mammals, etc.)</li> <li>• Lead/support engagement and/or consultations with individual First Nations.</li> </ul>
<b>Bay Area</b>	<ul style="list-style-type: none"> <li>• Work with DFO and Provinces to analyse and manage issues with cumulative or broader environmental characteristics (bycatch, sea lice, fish health, disease)</li> </ul>
<b>Management Area ** unit to be used for planning &amp; management**</b>	<ul style="list-style-type: none"> <li>• Roll up Bay Area information for broader environmental analysis, reporting and development of management approaches.</li> <li>• Lead engagement of Indigenous communities in development of priorities related to Science, Monitoring and Research at Area scale.</li> <li>• Collaborate in development of joint Consultation and Governance approaches at the Govt to Govt to Govt level.</li> </ul>
<b>Region</b>	<ul style="list-style-type: none"> <li>• Assist in rolling up planning, performance results , and response recommendations at the Management Area level within each province for joint consideration by regional Indigenous Coordination bodies (e.g., FNFC-ACC), DFO and Provincial authorities.</li> </ul>
<b>National</b>	<ul style="list-style-type: none"> <li>• Roll up results at the Regional level to the AFN National Aquaculture Working Group and DFO.</li> </ul>

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## Proposed Pilot - Northern Vancouver Island Aquaculture Management Area

- Includes 4 Bay Management sub-units: Quatsino, Queen Charlotte Strait, Broughton, Discovery Islands (brown area on FNFC map).
- Aligns with DFO PFMA's 12 & 13 & 27
- Incorporates the entirety of the greater Kwakwaka'wakw Nation (traditional governance – see Annex 1).
- Includes 2/3 of BC's marine finfish salmon aquaculture production.
- Challenging area to meet the bar of expectations for Indigenous consultation.
- Includes LOU area with Province of BC.
- First Nations interest in participation.
- Southern unit of the Pacific North Coast Integrated Management Area.



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## Path Forward

- Pilot one area first, evaluate success prior to broad implementation;
- Plan for eventual 100% coverage of the Pacific coast and work on capacity nationally;
- Develop approach in partnership with Provinces and Indigenous groups;
- Increase Alignment with Oceans Management and Integrated Fisheries Management approaches; and
- Develop links between Area-based Aquaculture Management scales: local scale/ bay area/ management area/ Provincial/ Canada.



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## Next Steps

1. Prepare analysis of management and performance data at the Bay scale and Management Area for discussion with Indigenous groups.
2. Develop plan with resource requirements, timeframes, and deliverables
3. Bring together Indigenous governments to discuss their interest and willingness to participate in pilot.
4. Establish MOU to include agreement to:
  - Increase transparency and share information on a regular basis;
  - Develop a plan to increase Indigenous engagement in monitoring, science and research and increase use of LEK/TEK in decision-making;
  - Develop an aquaculture suitability map/tool; and
  - Develop a Terms of Reference for an enduring government to government relationship related to management and decision-making.



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## ABAM and Potential Science Needs

1. Development of ecosystem based “areas” to facilitate Area Based Management
2. Sea lice management and determination of harm to wild salmon
3. Fallowing as mitigation for disease transmission in farmed fish
4. Consider disease profiles (existing and emerging) of different areas and whether specific management measures might be required to respond to area differences
5. Better understanding of status of wild salmon stocks @ CU level and their spatial relationships to salmon farms

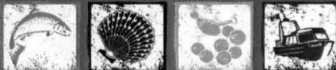


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# Annexes



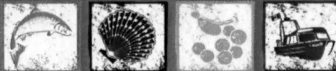
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## Ecosystem Based Areas(Finfish)

**Potential indicators/framework for area-based management**

- Current management approach based primarily on mitigating potential risks on the farm/site level
- Delineate areas along BC's coast for the purposes of ABM by industry based on hydrology (i.e., FVCOM) and ecosystem features that show connectedness
  - To allow for coordinated stocking, harvest, fallowing, and treatments
- Consider sea lice transmission strength/risk between farms as the basis for determining areas
  - See Cantrell et al., 2018
- Evaluate possible performance measures that indicate a carrying capacity for an area
  - For example: mortality levels, harmful algal blooms, etc.



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**Page 34**

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est retenue en vertu des articles**

**21(1)(b), 21(1)(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

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## Emerging Diseases

### Characterization of emerging diseases – Using Example of PGD


- Examination of emerging diseases such as proliferative gill disease (PGD) in Canada's Pacific watershed
  - What role (if any) do pathogens, husbandry practices, and/or environment play in the etiology of the disease?
  - Comparison of gill health in the hatchery before seawater entry and region-specific changes after transfer
- What is the current distribution of amoeba in BC
  - Possible use of eDNA detection methodology
  - Is it possible /desirable to maintain amoeba-free areas?
    - E.g., Similar to what is currently done in Tasmania
  - Is the genotype of BC's amoeba the same as the current or historical amoeba known to be present in WA state for decades prior, or is this a new introduction?



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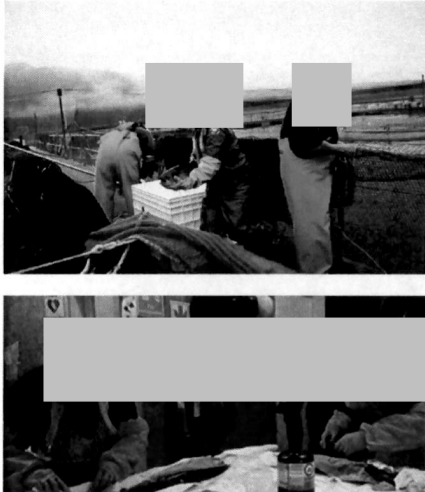
 Fisheries and Oceans Canada / Pêches et Océans Canada

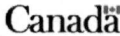
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## Fish Health Priorities: BC Context and Drivers

Presentation to the PARR  
Annual Science Meeting

February 26-27, 2019





## Background and Context

The aquaculture regulatory and policy landscape is shifting in BC. Pacific Region Science priorities are influenced by:

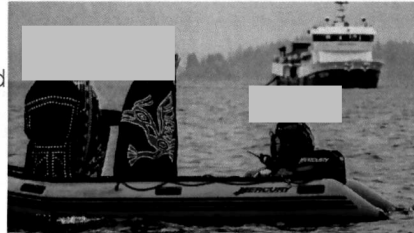
- Enhanced public and First Nations concern and sustained media attention about the impacts of aquaculture on wild fish
- First Nation interest in involvement in aquaculture management
- Announcements by the Government of BC related to aquaculture tenure renewal and Broughton process
- Internal and external audits (AusVet, CESD and MAACFA) and recommendations for improving aquaculture management
- Diminished public trust in DFO aquaculture science compared to non-government science
- DFO Ministerial announcements
- Litigation

7/10/2019

## First Nation Concerns about Farmed Salmon Impacts on Wild Fish

Sustained First Nation and public concern regarding the impact of farmed fish on Wild stocks has resulted in:

- Litigation (Morton/'Namgis; Dzawada'enuxw court case)
- Active media attention
- ATIPs



### Salmon samples outside B.C. farm pens test positive for PRV, biologist says

By [redacted] Vancouver

WML, Aug. 22, 2018

f t i

Samples of salmon taken from pens just outside five B.C. salmon farms have tested positive for piscine reovirus, independent biologist Alexandra Morton said Wednesday.

The virus, PRV for short, is known to cause heart and skeletal muscle inflammation in Atlantic salmon and can be lethal in some cases. While more study is needed to fully understand the effect the virus may have on B.C. salmon species, at least one study has shown that it may also be associated with negative health impacts on Chinook salmon.



### Drug resistant sea lice 'out of control' on B.C. coast: Report

RESEARCHERS ARE CONCERNED ABOUT AN INCREASING NUMBER OF JUVENILE SALMON THAT ARE INFESTED WITH SEA LICE.



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## First Nation Interest in Aquaculture Management

Many BC First Nations want to participate in aquaculture activities (science, monitoring and data collection) in a meaningful way

- Advances the GoC's reconciliation agenda
- Builds capacity and provides economic opportunities
- Supports implementation of an Indigenous monitoring program



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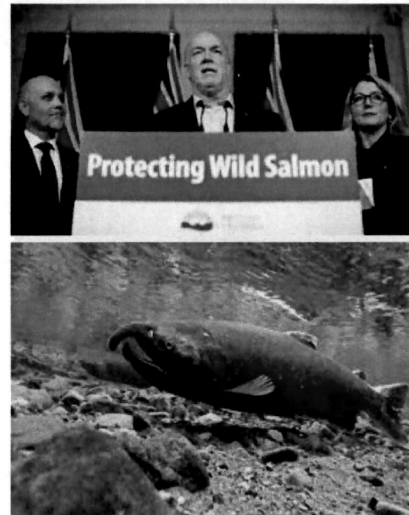
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7/10/2019

## Active Provincial Agenda on Salmon

The Province of BC has undertaken numerous initiatives focusing on Wild Salmon protection

- June 2018 announcement on aquaculture ("... will not adversely impact salmon stocks")
- Wild Salmon Advisory Council
- Integrated Pest Management regulatory reform
- Review of Effluent discharge permitting



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## Responses to External Audit Recommendations

- The Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA) report
  - Recommendations on pathogens and disease
- Auditor General's CESD report
  - Complete Cohen commission risk assessments by 2020
- The Independent Expert Panel on Aquaculture Science report
  - Recommendations on use of scientific evidence in risk-based decision making



Minister of Agriculture's Advisory Council on Finfish Aquaculture  
Final Report and Recommendations

January 31, 2018

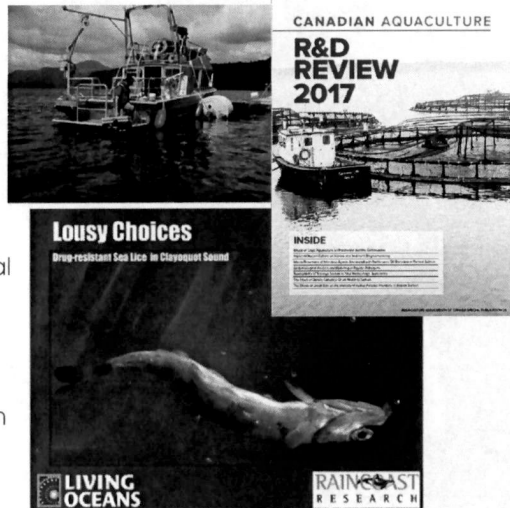
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## Low Public Trust in DFO Science

DFO science related to aquaculture viewed as less credible in BC than non-government science

- Significant focus on fish health, PRV/HSML, etc.
- DFO science viewed as inaccessible
- Lack of timely Departmental responses to incorrect information in the media
- Discrepancy between perceived risk vs actual risk of environmental harm from aquaculture



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## Implementing DFO Minister's Announcements

- Minister has recently announced a number of initiatives to ensure the future sustainability and competitiveness of Canada's MFF sector:

- *Wild Salmon Policy*
- FARM and Precautionary approach
- Area Based Aquaculture Management
- Alternative Technology Study
- PRV Risk assessment



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7/10/2019

## Morton/'Namgis Decision



- Decision came down from the court Feb 4, 2019
- DFO was directed to review the current PRV policy which was quashed and given a 4 month timeframe to complete this
- In so doing, DFO would need to be mindful of more clearly considering and articulating potential impacts/harm to wild salmon
- Judge commented that it was not the role of court to make scientific findings

**Federal court rules farmed salmon must be tested for deadly virus in B.C.**

National News | February 6, 2019 by APTN National News Attributed to:

**Federal Court overturns controversial salmon farm policy**

By [REDACTED] StarMetro Vancouver

[REDACTED] StarMetro Vancouver

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## Previous Pac Region Research Priorities Still priority or Ever Shifting?

1. Risk assessments with respect to the transfer of microbes, pathogens and disease between cultured and wild fish stocks (impacted by PRV RA)
2. Development of ecosystem based "areas" to facilitate Area Based Management
3. Sea lice management and determination of harm to wild salmon
4. Fallowing as mitigation for disease transmission in farmed fish
5. Characterization of emerging diseases
6. Modelling and monitoring approach to evaluate ecological carrying capacity for shellfish aquaculture
7. NEW: PRV Impact Assessment on Chinook?
8. Other?

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## Moving Forward: A Balancing Act

- **Increase capacity in fish health team**
  - Vet, epidemiologist for increased analysis of data
- **PA framework** implementation to identify areas of more than low risk and direct science efforts
- **Area based management**
- **Performance based standards**
- **Increased outreach and collaboration with Science:**
  - Development of an integrated Aquaculture Science Research Plan with input from AMD, Science, First Nations and stakeholders
  - Aquaculture Communications Strategy
  - Responding to Morton/'Namgis Court Decision



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## Webb, Allison

---

**From:** McCorquodale, Brenda  
**Sent:** Monday, February 25, 2019 3:00 PM  
**To:** Webb, Allison  
**Cc:** Waddington, Zac; McConnachie, Sarah; Paylor, Adrienne; Jepps, Shelley; Chamberlain, Jon  
**Subject:** Particle tracking modelling science as foundational piece of Area Based Aquaculture Management

Hi Allison

We had a great meeting today with Science, talking about the application of FVCom models to sea lice transmission (and possibly disease) as a method of developing basic geographic marine units for Area Based Aquaculture Management (ABAM). With the basic modelling already done, it doesn't look like running these models will be too lengthy or expensive an endeavor, and have a high potential of providing very useful information upon which we can build for other elements of ABAM.

If there is an opportunity to put forward this work as a priority at the PARR meetings, to secure support and funding for this work in the coming year, we feel it should be a high priority, and a necessity for moving forward ABAM. Presumably Science is going to be looking for opportunities to support the ABAM objectives at the meeting this week.

Jon Chamberlin is fully supportive of this work, and also sees it potentially linking into other elements of work currently being undertaken with respect to oil spill response – which include more dynamic applications of the models (to actual real-time current and tidal modelling), as well as opportunities to overlay potential aquaculture risk information with information on sensitive and important habitats.

It also looks like we may be able to generate some concrete and relevant deliverables within a relatively short time frame, should this work be funded.

If you need any further information for the meetings let us know, but we see this as being a high priority for the national ABAM initiative.

Brenda

Brenda McCorquodale

Regional Manager, Aquaculture Resource Management  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des pêches  
Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: 250-902-8865

## **Delaney, Paula**

---

**From:** MacDougall, Lesley  
**Sent:** Monday, March 4, 2019 9:12 PM  
**To:** Webb, Allison; Kennedy, Eddy; Salomi, Corino; Holmes, John; Houston, Kim; Klaver, March; Paylor, Adrienne; Chamberlain, Jon; Candy, John; Higgins, Mark; Miller-Saunders, Kristi  
**Subject:** RE: Steering committee meeting: AMD/SEP/Science priorities, initiatives, workplanning workshop  
**Categories:** Yellow Category

Hello all – I will be at the Pacific Science Enterprise Centre on Wednesday so there won't be a PBS meeting room for this meeting. Please call in to the teleconference number as listed below instead.

Thanks  
Lesley

-----Original Appointment-----

**From:** MacDougall, Lesley  
**Sent:** February-20-19 1:29 PM  
**To:** MacDougall, Lesley; Webb, Allison; Kennedy, Eddy; Salomi, Corino; Holmes, John; Houston, Kim; Klaver, March; Paylor, Adrienne; Chamberlain, Jon; Candy, John; Higgins, Mark; Miller-Saunders, Kristi  
**Subject:** Steering committee meeting: AMD/SEP/Science priorities, initiatives, workplanning workshop  
**When:** March-06-19 4:00 PM-5:00 PM (UTC-08:00) Pacific Time (US & Canada).  
**Where:** teleconference 1-877-413-4782 [REDACTED] // PBS Conference room

Hi all, apologies for the late afternoon meeting.

You've been preliminarily identified as a steering committee member for a research/management workplanning workshop.

If you would recommend someone else in your sector instead please let me know.

Keep in mind this is the *Steering Committee* only, not the full participants list for the workshop.

Steering Committee objectives: 1) develop objectives for research / management workplanning workshop [tentatively scheduled for early April] 2) identify participants 3) identify logistics support (workshop coordinator(s), chair, note takers)

Agenda for SC phonecall draft workshop:

1. Draft Objectives for workshop – for discussion:

Day 1 – updates and “101’s”

- Update on Aquaculture, Science and SEP initiatives – progress, deliverables, prioritization of planned next steps
- Pilot working group : Chinook?
- Genetics and Genomics : genetics risk, genetic stock ID, etc.
- New technologies – closed containment, other

Day 2 (and 3? – currently have a save the date for 2 days total)

- Short – medium – long term research and management needs
  - Outstanding CSAS requests
  - Regional approach to advancing sustainable aquaculture program – ensure sci and AMD are aligned – moving from Bbase to Abase

s.16(2)(c)

- Priorities identified from aquaculture / SEP / Sci initiatives
  - Pathogens / pests – risk (Sea Lice, PRV)
  - Approaches to Area Based Management (Marine Spatial Planning, how to define areas, how to validate some assumptions (e.g. farm to farm transfer) identification of indicators, some kind of risk management process, other?) – fish health AND other ecological impacts – e.g are nutrients linking to algal blooms, what is the risk of hydrogen peroxide use, sediment loads
  - Tools (Databases, other)
  - gaps
2. Participants:
  3. Workshop logistics support:

No information has been removed or severed from this page

**Delaney, Paula**

---

**From:** [REDACTED]  
**Sent:** Tuesday, March 12, 2019 4:13 PM  
**To:** Chia, Heather FLNR:EX; Webb, Allison; Delaney, Paula; [REDACTED]  
Dickie, Catherine; Lowe, Carmel; Chief Robert Chamberlin - KHFN; [REDACTED]  
[REDACTED] Mack, James  
AGRI:EX; [REDACTED] Puggioni, Giovanni IRR:EX; [REDACTED]  
Scott, Melissa AGRI:EX; [REDACTED] Short, Charles J FLNR:EX; Sutherland, Craig FLNR:EX;  
Thomas, Emily IRR:EX; Travia, David V AGRI:EX  
**Subject:** Juvenile Wild Salmon Sea Lice Monitoring Program  
**Attachments:** Broughton Sea Lice Monitoring Program.pdf

Good afternoon all,

As discussed, Mowi, Cermaq and Grieg have collaborated on juvenile wild salmon sea lice monitoring in the Broughton for many years. The program originated through collaboration with ENGOs, DFO, industry and several universities and was known as BAMP; and eventually became a more streamlined monitoring program for ASC certification. The main elements of the program and sample site locations are summarized in the attached presentation.

Mainstream Biological Consulting will repeat the monitoring this spring (April and May) for ASC. They have room on their boat for 1-2 people and it may be possible to merge the field monitoring efforts between Watershed Watch and this initiative for 2019 and beyond. Sample dates are tentatively set for April 15-17 and May 13-15, weather permitting.

Results for each year are publicly available at this link: [https://marineharvest.ca/planet/salmon\\_certification/wild-salmonid-lice-monitoring/](https://marineharvest.ca/planet/salmon_certification/wild-salmonid-lice-monitoring/)

Please feel free to call me if you have any questions or comments.

[REDACTED] please let me know if you are available on Monday to discuss this.

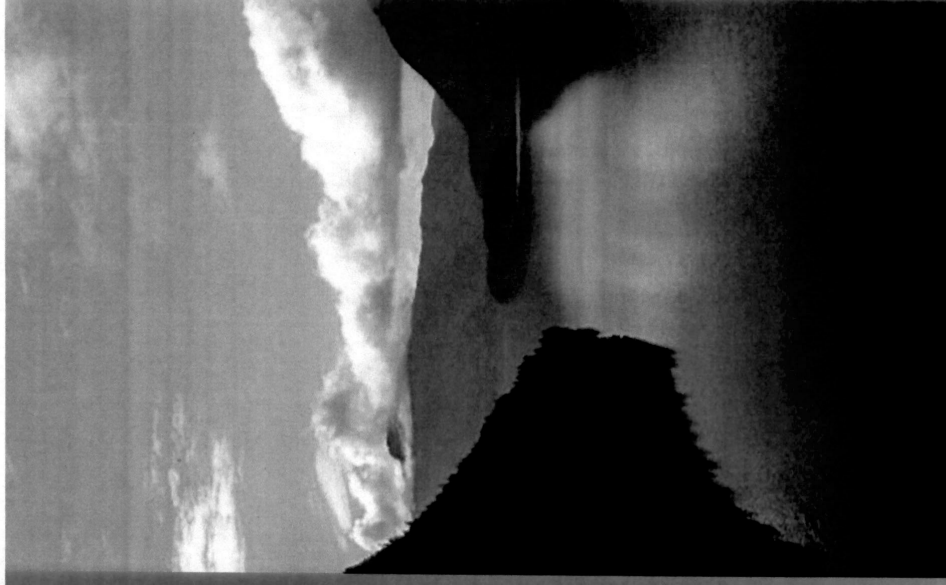
Regards,  
[REDACTED]

This e-mail sent from the company specified above and any attachment are confidential and may be privileged or otherwise protected from disclosure. It is solely intended for the person(s) named above. If you are not the intended recipient, any reading, use, disclosure, copying or distribution of all or parts of this e-mail or associated attachments is strictly prohibited. If you are not an intended recipient, please notify the sender immediately by replying to this message or by telephone and delete this e-mail and any attachments permanently from your system. It is not guaranteed that emails or attachments are secure or error or virus free.

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**MQWI<sup>®</sup>**

**Juvenile Wild Salmon  
Sea Lice Monitoring  
in the Broughton  
Archipelago**



## Joint Research/Monitoring of Sea Lice on Juvenile Wild Salmon

- Broughton Archipelago Monitoring Plan (BAMP) <http://bamp.ca/pages/home.html>
- Collaboration between ENGOs, DFO, Mowi, Grieg Seafood, and Cermaq
- Combined historical sea lice monitoring data for wild salmon (2004-2012)
- Jointly monitored wild salmon in the Archipelago 2010-2012. Analyzed results and published papers



## Broughton Archipelago Sea Lice Monitoring

### 2010 BAMP Sites

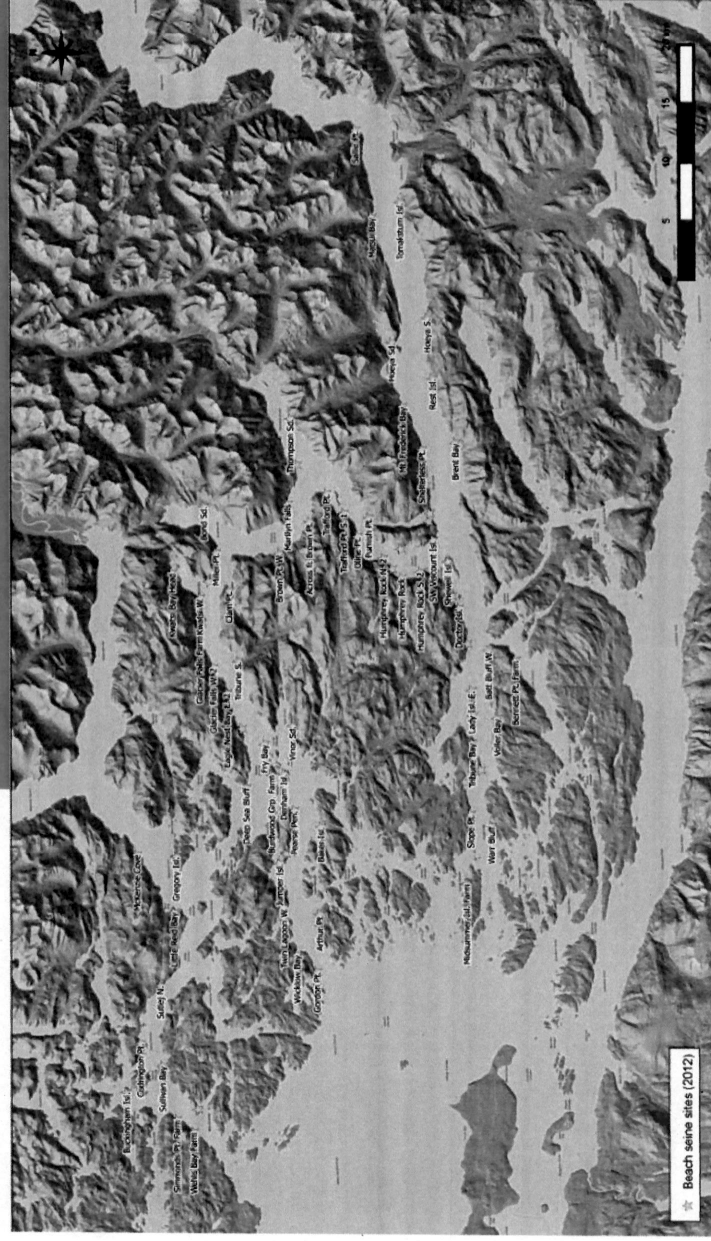
100 sample sites  
Combination of Dr. Krkosek and DFO sites  
Field crew from ENGOs, DFO and industry  
Standardized field and lab protocols  
Database built of historical data and new BAMP data



## Broughton Archipelago Sea Lice Monitoring

### 2012 BAMP sites

- Reduced sample sites to 80
- Kept locations where fish consistently captured
- Group analysis of data and joint publications

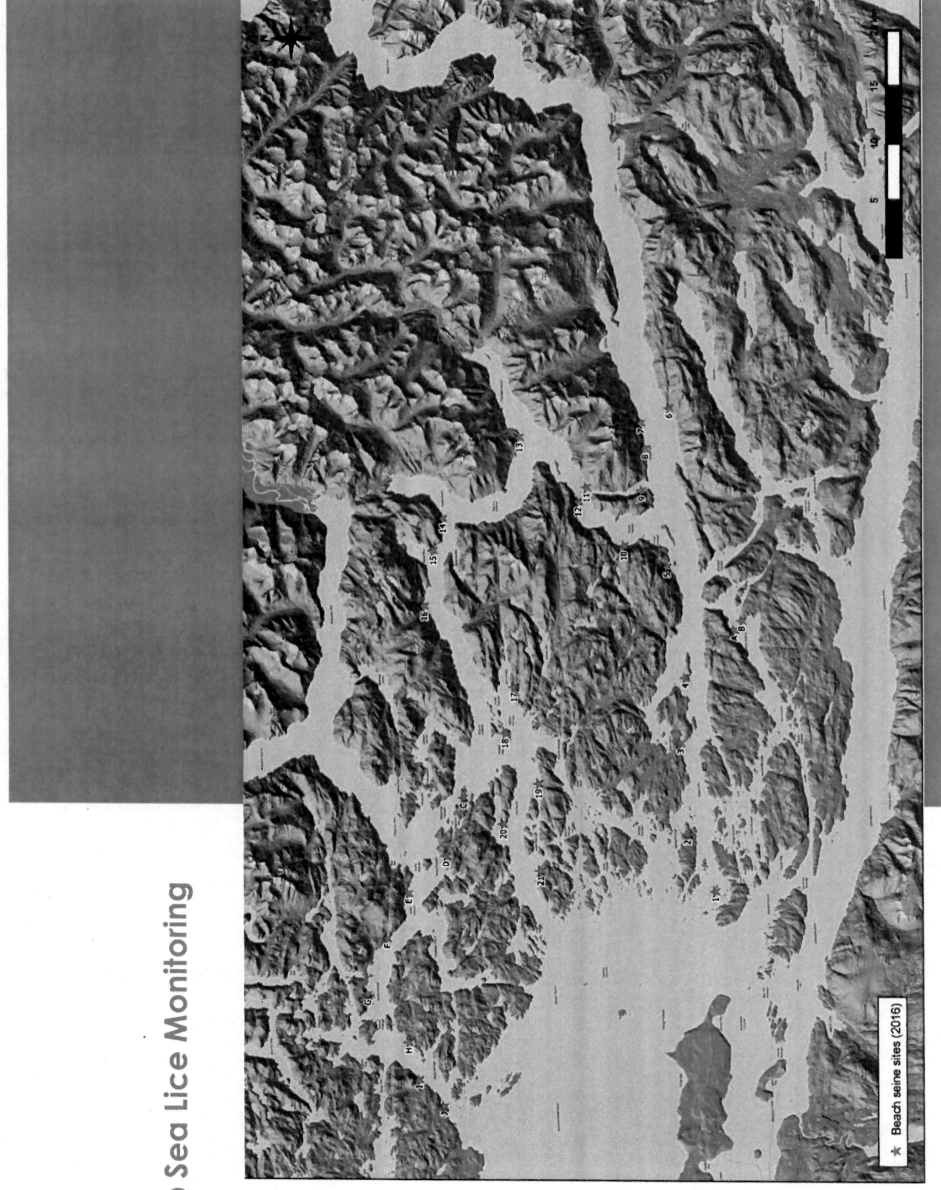




## Broughton Archipelago Sea Lice Monitoring

### 2016-18 "BAMPlite" sites

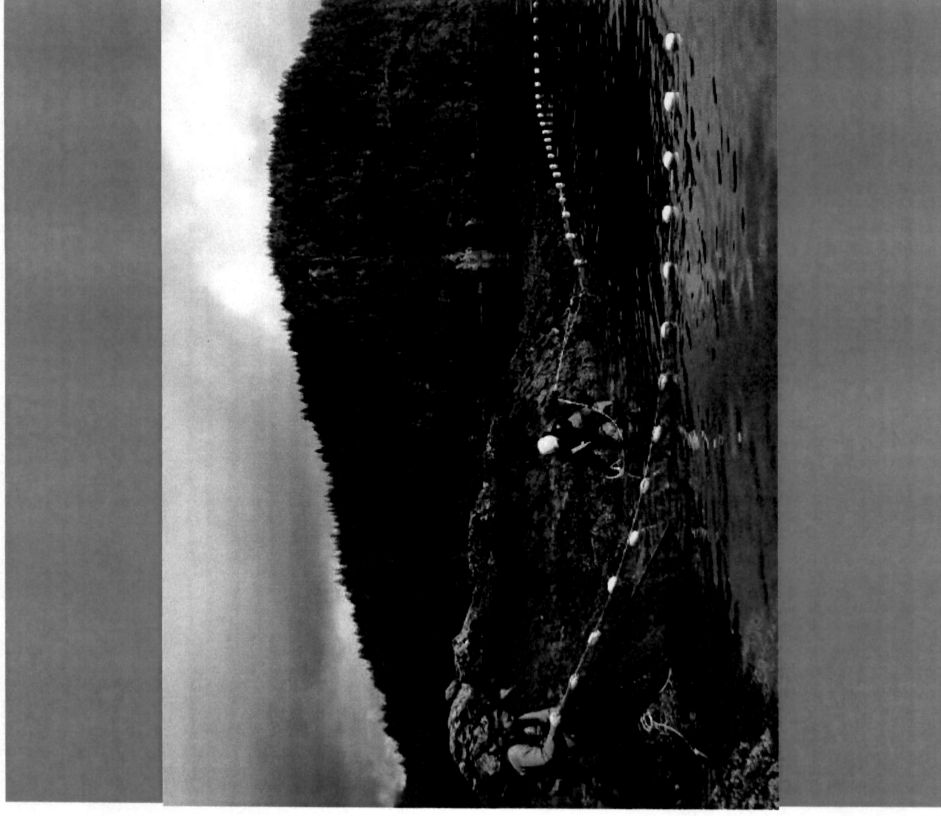
- Mowi, Cermaq and Grieg
- ASC Certification requirement
- Retained same lead contractor as BAMP, Mainstream Biological Consulting



## **Broughton Archipelago Sea Lice Monitoring**

Conducted by Mainstream Biological  
Consulting during April and May

- 32 sites sampled for juvenile fish
- Site selection based on historical sites and location relative to aquaculture facilities
- Results made publicly available at [marineharvest.ca/planet/salmon\\_certification/wild-salmonid-lice-monitoring/](http://marineharvest.ca/planet/salmon_certification/wild-salmonid-lice-monitoring/)



## Broughton Archipelago Sea Lice Monitoring

### Field Procedures

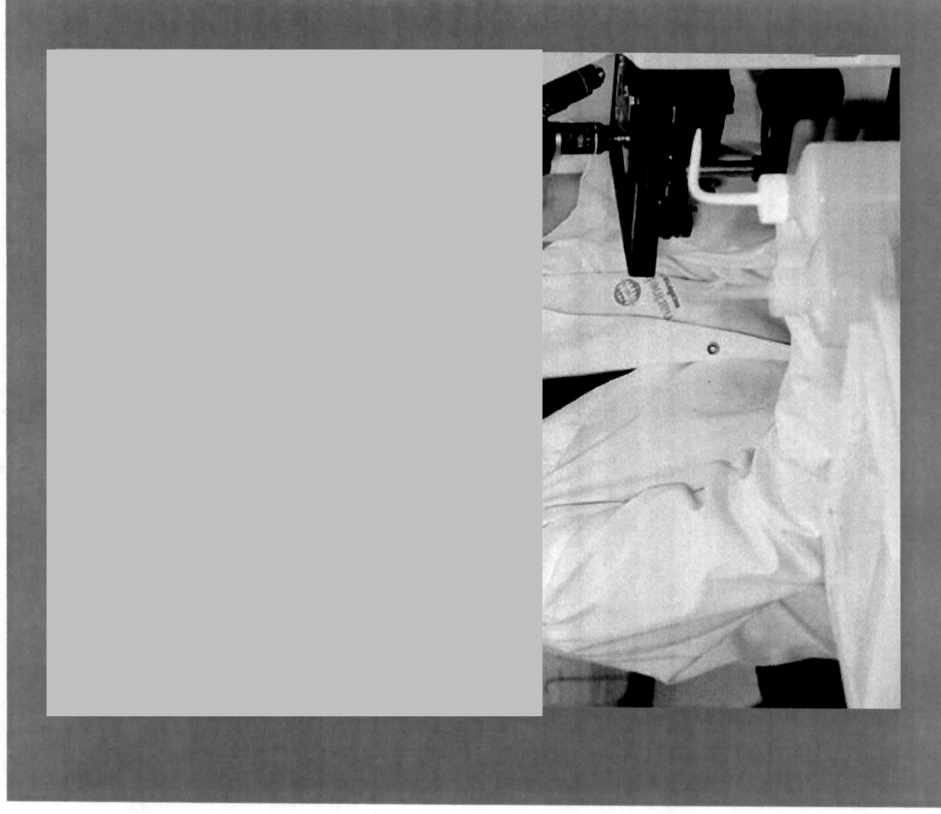
- 150'x12' beach seine deployed from 18' Boston Whaler
- 3 crew on board: one put ashore with towline, one deploys net, one runs boat
- Boat backs in slow semi-circle; once net is fully deployed, second crew member enters water to aid in retrieval of net
- Lead line retrieved faster than float, creating pocket
- Three crew work quickly to "swim" 30 individuals of each species into Whirlpac bags, while ensuring remaining fish are held in sufficient water to minimize stress
- Data recorded on field sheets
- Sampled fish labelled and placed in freezer
- Seine reloaded onto vessel and checked for holes

2019 Broughton Archipelago Juvenile Salmonid Monitoring Program									
Set No. _____									
Sample Location	Site Name:								
	Lat:								
	Long:								
Date:			Time:						
Weather Conditions:									
Tide:	High		Mid		Low				
Crew:									
Search Time (mins): (maximum of 5 minutes)									
Water Quality:	0.2 m (surface)		1 m		5 m				
Salinity									
Temperature									
Species	Total captured		Samples Retained						
Pink									
Chum									
Coho									
Chinook									
Sockeye									
Stickleback									
Comments (other species captured, logistical problems, wildlife etc.)									
Number/species of Salmonid Mortalities:									

## Broughton Archipelago Sea Lice Monitoring

### Laboratory Procedures

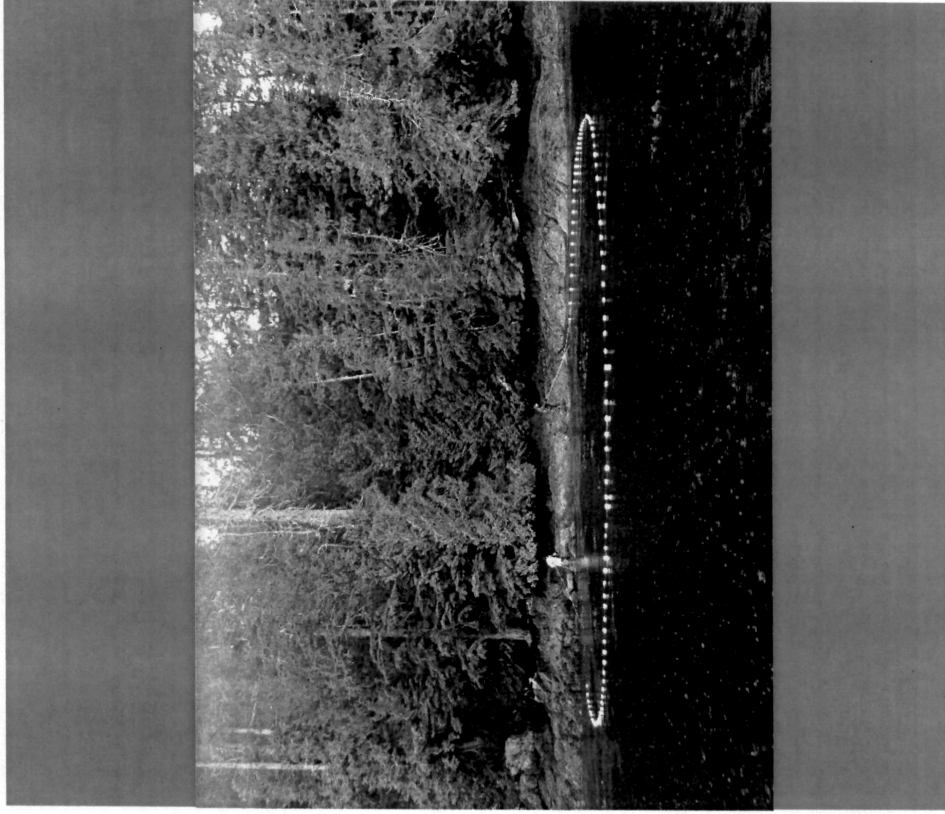
- Frozen samples submitted to the BC Centre for Aquatic Health Sciences
- Weight and fork length determined for each sample
- Analysis of sea lice species, life stage and sex conducted
- Infestation data tabulated at submitted to Mainstream for reporting



## Broughton Archipelago Sea Lice Monitoring

Chum by Year	<i>Caligus clemensi</i>			<i>Lepeophtheirus salmonis</i>		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=512)	20.3 %	0.32	1.6	13.3 %	0.19	1.4
2017 (n=562)	17.4 %	0.31	1.8	11.0 %	0.14	1.3
2018 (n=281)	12.5 %	0.16	1.3	10.3 %	0.11	1.1

Pink by Year	<i>Caligus clemensi</i>			<i>Lepeophtheirus salmonis</i>		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=430)	24.4 %	0.33	1.3	15.3 %	0.24	1.5
2017 (n=411)	15.1 %	0.23	1.5	6.6 %	0.09	1.4
2018 (n=356)	11.5 %	0.16	1.4	5.6 %	0.06	1.1



**Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Tuesday, March 19, 2019 5:50 PM  
**To:** Waddington, Zac  
**Subject:** RE: call on spring Sea lice monitoring

Yes that's fine Zac. See you tomorrow.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Waddington, Zac <[Zac.Waddington@dfo-mpo.gc.ca](mailto:Zac.Waddington@dfo-mpo.gc.ca)>  
**Sent:** Tuesday, March 19, 2019 2:11 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** FW: call on spring Sea lice monitoring

I just gave you a call about this. Sarah had a good idea that perhaps she would attend this meeting and subsequent meetings given her backfilling for me soon. That would be in lieu of her attending the Nanaimo meeting tomorrow which I feel would be a better use of her time given she won't be at the Tuesday meeting anyway.

Let me know your thoughts,

Zac

**From:** [REDACTED]  
**Sent:** March-19-19 1:59 PM  
**To:** Waddington, Zac <[Zac.Waddington@dfo-mpo.gc.ca](mailto:Zac.Waddington@dfo-mpo.gc.ca)>  
**Subject:** Fwd: call on spring Sea lice monitoring

s.19(1)

Begin forwarded message:

**From:** [REDACTED]  
**Date:** March 19, 2019 at 10:38:53 AM PDT  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
[REDACTED] "Chia, Heather FLNR:EX"  
<[Heather.Chia@gov.bc.ca](mailto:Heather.Chia@gov.bc.ca)>, [REDACTED]  
**Subject:** RE: call on spring Sea lice monitoring

Yes please

**From:** [REDACTED]  
**Sent:** March-19-19 10:33 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED] Chia, Heather FLNR:EX; [REDACTED]  
**Subject:** Re: call on spring Sea lice monitoring

Yes, certainly.

If we want DFO to participate Allison recommended Zac Waddington. Simon Jones was their lead scientist during BAMP. Do you want me to contact them?

[REDACTED]  
On Mar 19, 2019, at 10:29 AM, [REDACTED] wrote:

Thanks [REDACTED]

We can use your ppt to help with the discussion. Could you run through it to start?

[REDACTED]  

---

**From:** [REDACTED]  
**Sent:** March-19-19 9:43 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED] Chia,  
Heather FLNR:EX; [REDACTED]  
**Subject:** Re: call on spring Sea lice monitoring

Yes we can use the following line:

1-877-385-4099

Code [REDACTED]  
[REDACTED]

On Mar 18, 2019, at 5:21 PM, [REDACTED] wrote:

s.19(1)

Hi all,

There is a call scheduled for Wednesday March 20 at 3:00 to discuss the Mowi/Cermaq salmon outmigration sea lice program and the potential to merge with the FN IMIP monitoring for this spring. Does someone have a conference line as I suspect there could be a few folks wanting to join.

[REDACTED]  
<Broughton Sea Lice Monitoring Program.pdf>

## **Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Tuesday, March 19, 2019 5:49 PM  
**To:** [REDACTED]  
**Subject:** RE: Juvenile Wild Salmon Sea Lice Monitoring Program

Hi [REDACTED] - You can. I can't really speak to Simon's workload and availability, but it doesn't hurt to touch base with him. I am just putting my team forward as I do know what our ability to support any of this work is.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** [REDACTED]  
**Sent:** Tuesday, March 19, 2019 9:46 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; [REDACTED]  
**Subject:** Re: Juvenile Wild Salmon Sea Lice Monitoring Program

Thanks Allison,  
Should we also contact Simon Jones who was the DFO lead for BAMP?

[REDACTED]

On Mar 18, 2019, at 10:16 AM, Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)> wrote:

Hello [REDACTED] et al – If there is any interest in having DFO involved in this work or seeing the results and/or an interest in having First Nations participation in the sea lice sampling done by DFO (mainly farmed, limited wild fish), please contact Zac Waddington, our vet who is cced here.

Kind regards,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)

**From:** [REDACTED]  
**Sent:** Tuesday, March 12, 2019 4:13 PM  
**To:** Chia, Heather FLNR:EX <[Heather.Chia@gov.bc.ca](mailto:Heather.Chia@gov.bc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>;  
Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>; [REDACTED]



[REDACTED] Dickie, Catherine <Catherine.Dickie@dfo-mpo.gc.ca>; Lowe, Carmel  
<Carmel.Lowe@dfo-mpo.gc.ca>; Chief Robert Chamberlin - KHFN <Bobc@khfn.ca>; [REDACTED]

[REDACTED]  
[REDACTED] Mack, James AGRI:EX  
<James.Mack@gov.bc.ca>; Puggioni, Giovanni IRR:EX  
<Giovanni.Puggioni@gov.bc.ca>; Scott,  
Melissa AGRI:EX <Melissa.Scott@gov.bc.ca>; [REDACTED]; Short, Charles J  
FLNR:EX <Charles.Short@gov.bc.ca>; Sutherland, Craig FLNR:EX <Craig.Sutherland@gov.bc.ca>; Thomas,  
Emily IRR:EX <Emily.Thomas@gov.bc.ca>; Travia, David V AGRI:EX <David.Travia@gov.bc.ca>  
**Subject:** Juvenile Wild Salmon Sea Lice Monitoring Program

Good afternoon all,

As discussed, Mowi, Cermaq and Grieg have collaborated on juvenile wild salmon sea lice monitoring in the Broughton for many years. The program originated through collaboration with ENGOs, DFO, industry and several universities and was known as BAMP; and eventually became a more streamlined monitoring program for ASC certification. The main elements of the program and sample site locations are summarized in the attached presentation.

Mainstream Biological Consulting will repeat the monitoring this spring (April and May) for ASC. They have room on their boat for 1-2 people and it may be possible to merge the field monitoring efforts between Watershed Watch and this initiative for 2019 and beyond. Sample dates are tentatively set for April 15-17 and May 13-15, weather permitting.

Results for each year are publicly available at this link:

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Please feel free to call me if you have any questions or comments.

[REDACTED] please let me know if you are available on Monday to discuss this.

Regards,  
[REDACTED]

This e-mail sent from the company specified above and any attachment are confidential and may be privileged or otherwise protected from disclosure. It is solely intended for the person(s) named above. If you are not the intended recipient, any reading, use, disclosure, copying or distribution of all or parts of this e-mail or associated attachments is strictly prohibited. If you are not an intended recipient, please notify the sender immediately by replying to this message or by telephone and delete this e-mail and any attachments permanently from your system. It is not guaranteed that emails or attachments are secure or error or virus free.

s.19(1)

**Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Friday, March 22, 2019 12:21 PM  
**To:** Backe, Nicole  
**Cc:** Johansson, Todd; McCorquodale, Brenda; Delaney, Paula  
**Subject:** RE: Juvenile Wild Salmon Sea Lice Monitoring Program

Oh thanks for letting me know. Happy to do that and will discuss with Paula to get her to support as well. Do I need to revise the one that I sent the other day given that or are you ok with that one? Tx Nicole,  
Allison



Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Backe, Nicole <Nicole.Backe@dfo-mpo.gc.ca>  
**Sent:** Friday, March 22, 2019 11:44 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Johansson, Todd <Todd.Johansson@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>  
**Subject:** RE: Juvenile Wild Salmon Sea Lice Monitoring Program

Will do. Thanks Allison.

Favour to ask -



s.21(1)(a)  
s.21(1)(b)  
s.23

Thanks

**Nicole Backe**

Aquaculture Management Coordinator, Fisheries Management Branch – Pacific Region  
Fisheries and Oceans Canada | Government of Canada  
[Nicole.Backe@dfo-mpo.gc.ca](mailto:Nicole.Backe@dfo-mpo.gc.ca) | Tel: 250-754-0399, Fax: 250-754-0391

Coordinatrice - Gestion de l'aquaculture, Direction de la gestion des pêches – Région Pacifique  
Pêches et Océans Canada | Gouvernement du Canada  
[Nicole.Backe@dfo-mpo.gc.ca](mailto:Nicole.Backe@dfo-mpo.gc.ca) | Tél : 250-754-0399, Télécopieur 250-754-0391

**From:** Webb, Allison  
**Sent:** March-21-19 6:11 PM  
**To:** Backe, Nicole  
**Cc:** Johansson, Todd; McCorquodale, Brenda  
**Subject:** FW: Juvenile Wild Salmon Sea Lice Monitoring Program

Hi Nicole – Brenda mentioned that we should add this to our consultation record. FYI and processing.

I'll make sure that I forward anything else of this nature in future.

Kind regards,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Webb, Allison  
**Sent:** Monday, March 18, 2019 10:16 AM  
**To:** [REDACTED] Chia, Heather FLNR:EX <[Heather.Chia@gov.bc.ca](mailto:Heather.Chia@gov.bc.ca)>;  
Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>; [REDACTED]  
Dickie, Catherine <[Catherine.Dickie@dfo-mpo.gc.ca](mailto:Catherine.Dickie@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; Chief Robert  
Chamberlin - KHFN <[Bobc@khfn.ca](mailto:Bobc@khfn.ca)>; [REDACTED]  
[REDACTED]  
[REDACTED] Mack, James AGRI:EX <[James.Mack@gov.bc.ca](mailto:James.Mack@gov.bc.ca)>;  
[REDACTED] Puggioni, Giovanni IRR:EX <[Giovanni.Puggioni@gov.bc.ca](mailto:Giovanni.Puggioni@gov.bc.ca)>; [REDACTED]  
[REDACTED]; Scott, Melissa AGRI:EX <[Melissa.Scott@gov.bc.ca](mailto:Melissa.Scott@gov.bc.ca)>; [REDACTED]  
[REDACTED] Short, Charles J FLNR:EX <[Charles.Short@gov.bc.ca](mailto:Charles.Short@gov.bc.ca)>; Sutherland, Craig FLNR:EX  
<[Craig.Sutherland@gov.bc.ca](mailto:Craig.Sutherland@gov.bc.ca)>; Thomas, Emily IRR:EX <[Emily.Thomas@gov.bc.ca](mailto:Emily.Thomas@gov.bc.ca)>; Travia, David V AGRI:EX  
<[David.Travia@gov.bc.ca](mailto:David.Travia@gov.bc.ca)>  
**Cc:** Waddington, Zac <[Zac.Waddington@dfo-mpo.gc.ca](mailto:Zac.Waddington@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Subject:** RE: Juvenile Wild Salmon Sea Lice Monitoring Program

Hello [REDACTED] et al – If there is any interest in having DFO involved in this work or seeing the results and/or an interest in having First Nations participation in the sea lice sampling done by DFO (mainly farmed, limited wild fish), please contact Zac Waddington, our vet who is ccd here.

Kind regards,  
Allison

s.19(1)



## Patirana, Anoma

---

**From:** Webb, Allison  
**Sent:** March-29-19 2:36 PM  
**To:** Waddington, Zac; McConnachie, Sarah; Paylor, Adrienne  
**Cc:** Patirana, Anoma; McCorquodale, Brenda  
**Subject:** FW: 29/3/2019 - Media Relations Tracking Report / Rapport de suivi des relations avec les médias

FYI – see story on sea lice – I wasn't aware of this request yet ... Tx

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** NCR Media RCN (DFO/MPO) <Media.XNCR@dfo-mpo.gc.ca>  
**Sent:** Friday, March 29, 2019 1:29 PM  
**To:** NCR Media RCN (DFO/MPO) <Media.XNCR@dfo-mpo.gc.ca>  
**Subject:** 29/3/2019 - Media Relations Tracking Report / Rapport de suivi des relations avec les médias

### HQ/RCN:

**Cable 14 Hamilton, Hamilton (Television)** (Responsive)  
Producer of current affairs show seeking DFO representative to discuss tracking of goldfish in Hamilton Harbour. Producer referred to Central and Arctic region. (NHQ) (S) (N) (Deadline: 02/04/2019) (Int Requested: No) (Int Outcome: Not Applicable)

**TVO, Toronto (Television)** (Responsive)  
Producer for The Agenda program seeking to join a team of researchers on the DFO study of goldfish in Hamilton Harbour. Producer referred to Central and Arctic region. (NHQ) (S) (N) (Deadline: 02/04/2019) (Int Requested: No) (Int Outcome: Not Applicable)

**Plimsoll Productions, Bristol (Television)**  
(Proactive) "We are really keen to film humpbacks around the Newfoundland coastline (probably based on the East Coast), feeding and more so follow the interesting scientific research that suggests that activity of the whales increase at night time. This would entail us pursuing the possibility of getting in the water with whales at night with specialist technology that would enable us to film their behaviour after sunset. I was hoping you would be able to help us answer some logistical questions about such a possibility? / Point us in the right direction of who could help us with such an endeavour." (NHQ) (FAM) (P) (Deadline: 02/04/2019) (Int Requested: No) (Int Outcome: Not Applicable)

### NFLD/T-N:

**Canadian Press, St. John's (Print)**  
(Referred) Reporter requested a comment from Coast Guard to explain the science behind sea ice tumbling up from the water to create a coastal "ice wall" like the one pictured in a local web story by VOCM News. Referred this request to ECCC media relations/Canadian Ice Service. (NL) (CCG) (N) (Deadline: 29/03/2019) (Int Requested: Yes) (Int Outcome: Referred elsewhere)

**CBC Radio, St. John's (Radio)** (Referred) Reporter wanted to speak with someone regarding humane harvesting training for seals. Referred to NHQ communications. (NL) (FAM) (N) (Deadline: 29/03/2019) (Int Requested: Yes) (Int Outcome: Referred elsewhere)

**GULF/GOLFE:**

Nil to report

**MARITIMES:**

Nil to report

**QUEBEC/QUÉBEC:**

**Pêche Impact, Grande-Rivière (Imprimé)** Le journaliste aimerait qu'on lui envoie l'avis aux pêcheurs et le plan de pêche pour la prochaine saison de pêche à la crevette. Les réponses sont en approbation à l'AC. (QC) ( ) (Deadline: 29/03/2019) (Int Requested: non)

**TVA Est-du-Québec (CFER), Rimouski (Télé)** Le journaliste voudrait connaître les quotas pour la pêche à la crevette et aimerait la confirmation qu'elle débute bien lundi le 1er avril. Les réponses sont en approbation à l'AC. (QC) (FAM) (Deadline: 29/03/2019) (Int Requested: non)

**Le Radar, Îles-de-la-Madeleine (Imprimé)** La journaliste aimerait connaître la réglementation entourant l'observation des blanchons aux Îles-de-la-Madeleine. Les réponses sont en approbation à l'AC. (QC) (FAM) (S) (Deadline: 29/03/2019) (Int Requested: oui)

**FM 93 Québec, Québec (Radio)** (Réactif) Le journaliste de l'émission Ségol Le Midi souhaite parler avec un porte-parole de la GCC pour faire le point sur les pouvoirs de la GCC en matière d'autorisations à se trouver sur le Saint-Laurent. Il veut aussi savoir combien de temps le trafic maritime a été arrêté pendant que les aventuriers étaient sur le fleuve. LA DRCom-Qc a transmis les infocapsules par courriel. (QC) (CCG / CCG) (S) (Deadline: 29/03/2019) (Int Requested: non) (Int Outcome: Non applicable)

**CNN News, USA (Télé)** Le journaliste voudrait des renseignements sur la pêche à la crevette qui débute lundi le 1er avril. Les réponses sont en approbation à l'AC. (QC) (FAM) (Deadline: 29/03/2019)

**Le Nouvelliste, Trois-Rivières (Imprimé)** (Réactif) Le journaliste veut savoir si la GCC confirme l'arrêt de la navigation sur le Saint-Laurent entre Trois-Rivières et Québec dû à la descente sur une banquise de 3 individus. La direction régionale des communications a confirmé que c'était une décision commune de l'APL et de la Corporation des pilotes du Saint-Laurent. (QC) (CCG) (S) (Deadline: 29/03/2019) (Int Requested: non) (Int Outcome: Non applicable)

**Radio-Canada, Mauricie, Trois-Rivières (Télé)** (Réactif) La journaliste aimerait avoir la confirmation que Frédéric Dion a transmis son plan d'urgence à la GCC. La direction régionale des communications a confirmé avoir reçu le plan d'urgence et a fait savoir aux participants qu'elle ne recommandait pas la tenue de l'activité. Nous avons retransmis les messages-clés pré-approuvés (voir Infocapsules). (QC) (CCG) (S) (Deadline: 29/03/2019) (Int Requested: non) (Int Outcome: Non applicable)

**28 mars**

**Radio-Canada, Mauricie, Trois-Rivières (Télé)** (Réactif) La journaliste voulait obtenir la confirmation de la GCC que le trafic maritime était interrompu. La direction régionale des communications a confirmé que l'APL, de concert avec la Corporation des pilotes, a décidé de ne pas faire transiter de navires dans ce secteur pendant la nuit du 28 au 29 mars. (QC) (CCG) (S) (Deadline: 29/03/2019) (Int Requested: non) (Int Outcome: Non applicable)

**CENTRAL & ARCTIC/CENTRE ET ARCTIQUE:**

**Max FM, Collingwood (Radio) (Responsive)** Wants to interview someone about icebreaking operations in Midland. In particular, to talk about the heavy ice that has prevented a bulk carrier from moving. Reporter discussed with someone in CCG (does not know who) the details of what was happening and that the Radisson was coming in to assist. The CCG employee then referred him to us for an official clip. Identifying spokes. (CA) (CCG) (N) (Deadline: 29/03/2019) (Int Requested: Yes)

s.19(1)

**PACIFIC/PACIFIQUE:**

**[REDACTED], Coast Reporter, Sechelt (Print)** [REDACTED]

(Responsive) A couple of wrecks of concern, including a vessel known as the Gulfstream II, were salvaged from Porpoise Bay in Sechelt. We are trying to confirm, in particular, if the Gulfstream was a wreck that either Transport Canada or Coast Guard had taken possession of and funded the removal of. Communications is checking with Small Craft Harbours and working with TC Communications. It appears that there is no CCG involvement with these removals. (PAC) (SCH) (P) (Deadline: 01/04/2019) (Int Requested: No)

**March 29**

**[REDACTED] Business in Vancouver, Vancouver (Web)** [REDACTED] wrote about Slice resistance last year. Sounds like a new insecticide is being approved for treatment here? Sounds like this particular farm, or region, may have worse problems with sea lice than others. Can you give me an update on what is being done here to address this outbreak? Is it possible the farms may have to have fish removed and fallowed? (PAC) ( ) (Deadline: 28/03/2019)

**[REDACTED] Vista Radio, Courtenay (Radio)** [REDACTED]

(Responsive) I'm following up on an incident in Powell River, a resident came across a large number of shrimp or prawns washed up on the shoreline just south of the Beach Gardens Resort and Marina yesterday afternoon. I'm looking to find out why they ended up there, and whether or not DFO is looking in to what happened. Moira Galbraith, the zooplankton expert, said this may be a breeding ball that got caught up with the tide and wind and got beached. It is not normal but there have been reports of similar occurrences. The males usually die shortly after breeding. Science would need a sample to determine if they were breeding or if this was something else. (PAC) (S) (N) (Deadline: 28/03/2019) (Int Requested: Offered) (Int Outcome: Provided)

**[REDACTED], CTV News, Vancouver (Television)** [REDACTED]

(Referred) Reporter is asking about Coast Guard being in Barnet Marine Park for the recovery a body. Looking for details. Communications confirmed Coast Guard is on-scene, but indicated that JRCC is the coordinating body for search and rescues. JRCC now provides incident updates via social media. (PAC) (CCG) (S) (Deadline: 28/03/2019) (Int Requested: No) (Int Outcome: Referred elsewhere)

*Prepared by / Préparé par*

Communications Branch | Direction générale des communications  
Fisheries and Oceans Canada | Pêches et Océans Canada

s.19(1)

## **Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Monday, April 1, 2019 7:12 PM  
**To:** Rainer, Michelle  
**Subject:** Re: For approval: Lufenuron / Sea lice in Clayoquot

Would be good to add in the bullet re the par, some reference to managing lice to minimize risk to wild salmon smolts out migrating - that is why we have these thresholds and why the companies need to treat. The link btw wild salmon protection and Aqua Management could be better explained upfront. Otherwise looks good albeit long.

Thanks,  
Allison

**Sent from my BlackBerry 10 smartphone on the Bell network.**

**From:** Rainer, Michelle  
**Sent:** Monday, April 1, 2019 6:46 PM  
**To:** Webb, Allison  
**Subject:** For approval: Lufenuron / Sea lice in Clayoquot

**Issue:** [REDACTED], Business in Vancouver [REDACTED]. Looking for information on Cermaq Canada's use of Lufenuron to treat sea lice. Clayoquot Action has issued a press release (attached) and a group called Salmon People has started a letter writing campaign. There have been concerns about sea lice levels in Clayoquot Sound over the past year and last year Cermaq's farms in the area had high lice levels during the wild salmon outmigration period.

**Deadline:** April 2, noon PST

**Recommendation:** email response

**Approved by:** Sarah McConnachie, Claire Doucette, Adrienne Paylor

- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area. **Approved**
- In Clayoquot sound over the winter/spring of 2017-2018, the typical drop in salinity that comes with rains did not occur. This higher salinity resulted in increased lice production in the region and exacerbated the lice levels on farms. **Approved**
- In early 2018, Fisheries and Oceans Canada (DFO) collected sea lice from Cermaq Canada's Bawden site in the Clayoquot area and sent them to the BC Centre for Aquatic Health Sciences for analysis, which confirmed emamectin benzoate (SLICE®) resistance. **Approved**
- Due to continuing high ocean salinity in 2019, there is concern that sea lice levels may once again be high during the critical juvenile outmigration period this spring. DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the outmigration period and that its licence requirements are understood and followed. **New**
- Health Canada has issued an emergency drug release (EDR) to Cermaq Canada for the use of Lufenuron. Drugs used in salmon aquaculture are approved and managed by Health Canada. **new**
- Lufenuron is used widely and safely in veterinary medicine as a topical flea/parasite preventative for dogs and cats. **new**

s.19(1)



- When used to treat salmon, it is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities prior to transfer to marine sites. **New**
- DFO was not involved in the application or review process for the Lufenuron EDR but we were notified by Cermaq Canada of its use in their sea lice mitigation plan. DFO supports the use of varied treatment applications to ensure that sea lice resistance to available drugs does not become a widespread problem. Varied treatment choices are consistent with a responsible integrated pest management approach to sea lice mitigation. **new**
- Upon ocean entry, the fish should be protected from sea lice infestation for up to 6 to 9 months, thus reducing reliance on and other treatments that may be stressful to fish. **new**
- Under the Pacific Aquaculture Regulations, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea lice abundance at these facilities. **approved**
- Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year. Motile lice are those at the free-moving stages of their life cycle. **approved**

#### ***Responsive on results of investigation***

- The Department has reviewed Cermaq Canada's sea lice management practices in this region and, in March 2019, issued a warning letter to Cermaq Canada Ltd. for violation of certain conditions of licence. In total, 7 compliance issues were found. **new**
- DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the upcoming wild salmon out migration period and that its licence requirements are understood and followed. **new**

## Delaney, Paula

---

**From:** Webb, Allison  
**Sent:** Thursday, April 4, 2019 9:53 AM  
**To:** Rainer, Michelle  
**Subject:** Re: For approval: Lufeneron / Sea lice in Clayoquot

Please check my email from Tues where I provided comments to on this before approval. I received your out of office and hadn't heard back. Thx, Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Rainer, Michelle  
**Sent:** Thursday, April 4, 2019 12:46 PM  
**To:** Webb, Allison  
**Subject:** FW: For approval: Lufeneron / Sea lice in Clayoquot

Hi Allison,  
Just following up on approval for this.  
Thanks,  
Michelle

**From:** Rainer, Michelle  
**Sent:** April-01-19 3:47 PM  
**To:** Webb, Allison <Allison.Webb@dfp-mfp.gc.ca>  
**Subject:** For approval: Lufeneron / Sea lice in Clayoquot

**Issue:** [REDACTED], Business in Vancouver [REDACTED]. Looking for information on Cermaq Canada's use of Lufeneron to treat sea lice. Clayoquot Action has issued a press release (attached) and a group called Salmon People has started a letter writing campaign. There have been concerns about sea lice levels in Clayoquot Sound over the past year and last year Cermaq's farms in the area had high lice levels during the wild salmon outmigration period.

**Deadline:** April 2, noon PST

**Recommendation:** email response

**Approved by:** Sarah McConnachie, Claire Doucette, Adrienne Paylor

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- In Clayoquot sound over the winter/spring of 2017-2018, the typical drop in salinity that comes with rains did not occur. This higher salinity resulted in increased lice production in the region and exacerbated the lice levels on farms. **Approved**
- In early 2018, Fisheries and Oceans Canada (DFO) collected sea lice from Cermaq Canada's Bawden site in the Clayoquot area and sent them to the BC Centre for Aquatic Health Sciences for analysis, which confirmed emamectin benzoate (SLICE®) resistance. **Approved**
- Due to continuing high ocean salinity in 2019, there is concern that sea lice levels may once again be high during the critical juvenile outmigration period this spring. DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the outmigration period and that its licence requirements are understood and followed. **New**

s.19(1)

- Health Canada has issued an emergency drug release (EDR) to Cermaq Canada for the use of Lufenuron. Drugs used in salmon aquaculture are approved and managed by Health Canada. **new**
- Lufenuron is used widely and safely in veterinary medicine as a topical flea/parasite preventative for dogs and cats. **new**
- When used to treat salmon, it is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities prior to transfer to marine sites. **New**
- DFO was not involved in the application or review process for the Lufenuron EDR but we were notified by Cermaq Canada of its use in their sea lice mitigation plan. DFO supports the use of varied treatment applications to ensure that sea lice resistance to available drugs does not become a widespread problem. Varied treatment choices are consistent with a responsible integrated pest management approach to sea lice mitigation. **new**
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- The Department has reviewed Cermaq Canada's sea lice management practices in this region and, in March 2019, issued a warning letter to Cermaq Canada Ltd. for violation of certain conditions of licence. In total, 7 compliance issues were found. **new**
- DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the upcoming wild salmon out migration period and that its licence requirements are understood and followed. **new**

## Webb, Allison

---

**From:** Doucette, Claire  
**Sent:** Friday, April 12, 2019 1:22 PM  
**To:** Webb, Allison  
**Cc:** Paylor, Adrienne; Tomlinson, Daniel  
**Subject:** File Closure  
**Attachments:** 2019 C&P Sea Lice File Closure.docx

Allison, as promised at the last AMD, please find attached the conclusion to the sea lice file investigation that Officer Tomlinson has written. I wanted to provide this overview so that you can see the challenges with the Conditions of Licensing in this fishery. As we are working to address this matter, the best we can do, at this time is to work within the parameters of the legislation that we have in front of us. The review of this file certainly highlighted some of our own internal mistakes and therefore, C&P conducted a lessons learned with Adrienne and Zac. A warning letter has been issued for last year and we have developed a game plan for future out migration periods.

Moving forward/ Lessons learned:

- Clear and concise requests to the companies for individual site Plans – no bulk site plans (they would give us 4 or 5 sites and provide 3 or 4 mechanisms but we never really knew what was going to be used at each specific site);

I believe the above steps will assist us in developing clearer lines of communication with the companies and assist us should we find ourselves in a similar situation.

Thank you

Regards

s.21(1)(a)

s.21(1)(b)

Claire Doucette  
Chief Aquaculture | Chef de secteur aquaculture  
Conservation and Protection | Conservation et Protection  
Pacific Region | Région du Pacifique  
Fisheries and Oceans Canada | Pêches et Océans Canada  
1520 Tamarac St., Campbell River, BC., V9W 3M5  
claire.doucette@dfo-mpo.gc.ca  
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Facsimile | Télécopieur: (250) 754-0391  
Government of Canada | Gouvernement du Canada

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Conservation and Protection has completed its review of the 2018 Clayoquot Sound sea lice file and provides the following rationale for its enforcement response – specifically, issuance of a Warning Letter. The concerns raised were as follows:

**1. The conditions of licence lacks parameters:**

COL 6.4 states that the licence holder must: **(a) within 15 calendar days of the discovery, implement a plan which will reduce the absolute sea lice inventory within the containment structure array.** There is no requirement to reduce the sea lice numbers to a specific level or within a specific time frame. [REDACTED]

COL 6.5 states **(b) within 30 calendar days of the first discovery, provide a plan to address the exceedance to the Department, for its considered response.** The plan to “address” the exceedance and the “considered response” are without parameters; DFO can’t arbitrarily start adding more requirements to the COL via its response. [REDACTED]

**2. The Plan:**

There was substantial correspondence between Cermaq and DFO with regards to various plans which began as early as December 2017. DFO’s lack of site specific requests for “Plan” information as well as failing to Warn the company for not providing Plans within the regulatory time frame, outside of the migration window, [REDACTED] Their plan to use a Hydrolycer that they didn’t own and peroxide for which they didn’t have a permit [REDACTED]

[REDACTED] that led to a resistance prior to outmigration; however, these details were forwarded to DFO. DFO didn’t comment negatively with regard to the Plan other than to say that “the regulation is to enter the outmigration below threshold” which is not what 6.4 states.

**3. Correspondence**

DFO was not clearly articulating to Cermaq staff what the requirements of the law were. Statements were being made that spoke more to what the intent of the law was versus the actually wording of the law. DFO AEO staff work day in and day out with the veterinarians from these companies and [REDACTED]

s.16(1)(c)  
s.21(1)(a)  
s.21(1)(b)  
s.23

The May 23 correspondence from DFO to Cermaq states:

*Thank you very much for your response and detailed information regarding sea lice management in Clayoquot.* [REDACTED]

**Page 71**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**16(1)(c), 21(1)(b), 21(1)(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Delaney, Paula**

---

**From:** Webb, Allison  
**Sent:** Tuesday, April 16, 2019 8:44 AM  
**To:** Doucette, Claire  
**Cc:** Paylor, Adrienne; Tomlinson, Daniel  
**Subject:** RE: File Closure

**Categories:** ATIP 2019-00081 CM

Thanks so much for this Claire. It is important that we have this documented and can refer to this for the future and bear in mind in trying to make changes to our management of sea lice. As you are aware, we are concerned about the lack of ability to move forward with these investigations given the exceedance of our thresholds. This will be a priority for this next year.

Kind regards,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Doucette, Claire <Claire.Doucette@dfo-mpo.gc.ca>  
**Sent:** Friday, April 12, 2019 1:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>; Tomlinson, Daniel <Daniel.Tomlinson@dfo-mpo.gc.ca>  
**Subject:** File Closure

**Patirana, Anoma**

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**From:** Webb, Allison  
**Sent:** May-15-19 9:13 AM  
**To:** Patirana, Anoma  
**Subject:** FW: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 9:03 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please

---

**From:** McCorquodale, Brenda  
**Sent:** May-14-19 7:55 PM  
**To:** Paylor, Adrienne  
**Subject:** Fwd: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please

See Neil's comments - he is Andy this week.  
Brenda

A/Director, Aquaculture Management Division (April 18, 2019 - May 15, 2019)  
Regional Manager, Aquaculture Resource Management  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des pêches  
Pêches et Océans Canada  
1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: [250-754-0367](tel:250-754-0367)

----- Original message -----

**From:** "Davis, Neil" <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>  
**Date:** 2019-05-14 4:45 PM (GMT-08:00)  
**To:** "Barton, Meagan" <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>  
**Cc:** "McCorquodale, Brenda" <[Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please



The response lines really don't address the questions. If there are privacy reasons that some details can't be shared we should say so. I recognise we may not want to get into a detailed tit for tat on this, but these still need to be reworked to more meaningfully respond.

**From:** Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>  
**Sent:** Tuesday, May 14, 2019 3:27 PM  
**To:** Davis, Neil <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>  
**Cc:** McCorquodale, Brenda <[Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please

From Comms:

*Ideally, we would need Neil's approval today so that we can get it to RDG, and then to NHQ for approval first thing tomorrow morning*

*If you could **please cc Leri Davies and Michelle Rainer** when Neil Davis approves, that would be great. Then Leri can continue with RDG approvals.*

**Meagan Barton**

Executive Assistant to the Regional Director Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tel : 604-666-0753

Adjointe exécutive au Directeur Régionale, Direction de la gestion des pêcheries  
Pêches et Océans Canada | Gouvernement du Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tél : 604-666-0753

**From:** Barton, Meagan  
**Sent:** May-14-19 2:43 PM  
**To:** Davis, Neil <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>  
**Cc:** McCorquodale, Brenda <[Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)>  
**Subject:** FW: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please  
**Importance:** High

For your review and approval. I've cc'd Brenda at the same time so she has an opportunity to flag anything major!

**Meagan Barton**

Executive Assistant to the Regional Director Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tel : 604-666-0753

Adjointe exécutive au Directeur Régionale, Direction de la gestion des pêcheries  
Pêches et Océans Canada | Gouvernement du Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tél : 604-666-0753

**From:** Imbeau, Michelle <[Michelle.Imbeau@dfo-mpo.gc.ca](mailto:Michelle.Imbeau@dfo-mpo.gc.ca)>  
**Sent:** May-14-19 1:46 PM  
**To:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>  
**Subject:** FW: CTV NATIONAL NEWS - SEA LICE OUTBREAKS - urgent approval please  
**Importance:** High

Urgent: Media inquiry and media lines for RD FAM approval please.

**Issue:** [REDACTED] **CTV National** [REDACTED]. I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island. She has posed a number of questions about sea lice levels. In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound. It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq).

1. Can you tell me what your teams are finding in terms of sea lice infection rate in these areas? Do you have teams out there monitoring and tracking the outbreak?
2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?
3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?
4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?

**Deadline:** Wednesday, May 15 1:00pm Pacific

**Recommendation:** email response

**Approved by:** Anoma Patirana, Adrienne Paylor, Brenda McCorquodale (pending)

**Proposed messages:**

- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.  
**Previously approved**
- In British Columbia, Fisheries and Oceans Canada (DFO) has implemented a strict regulatory regime to ensure that the industry operates in an environmentally sustainable manner, that aims to minimize the risk to wild fish stocks and aquatic ecosystems. **new**
- The regulations, environmental management requirements, and compliance and monitoring activities that are in place to ensure that the industry operates in a sustainable manner are available on the DFO website under Aquaculture in British Columbia <http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.html>. **Previously approved**
- DFO has been monitoring and analyzing sea lice data since 2011 for indication of resistance to the emamectin benzoate (SLICE). Prior to 2017, more than 95 percent of SLICE treatments in the Clayoquot area were considered to be effective. **new**
- During the outmigration this year, of the nine Cermaq farms audited by DFO, three farms have been in constant communications between the DFO veterinarian and Cermaq veterinarian, as they have been over threshold in the outmigration period. During the outmigration this year, there are three farms that have been in constant communications between the DFO veterinarian and Cermaq veterinarian, as there have been three out of nine farms that were over threshold in the outmigration period. In responses to the over thresholds, the company

has accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction. Harvest rates have been at a level to ensure that overall sea lice abundance has decreased as required in the Aquaculture Conditions of Licence. This is the case with the Bedwell site that is currently being harvested and is expected to be empty near the end of May. **new**

- Prior to restocking farm sites in Clayquot Sound, DFO worked with Cermaq to ensure new smolts are treated with Lufenuron before entering the sea. **new**
- When used to treat salmon, Lufenuron is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities prior to transfer to marine sites. **New**
- Upon ocean entry, the fish are typically protected from sea lice infestation for up to 6 to 9 months, thus reducing reliance on and other treatments that may be stressful to fish. **New**
- Under the *Pacific Aquaculture Regulations*, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea lice abundance at these facilities. **Previously approved**
- Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year. Motile lice are those at the free-moving stages of their life cycle. **Previously approved**
- Sea lice numbers in the fish treated with Lufenuron has been far below threshold during the outmigration period. A DFO biologist will be in the Clayquot area in early June to audit the lice numbers at five of the eight remaining Cermaq sites as part of the Fish Health Audit and Surveillance Program. **new**

***If pressed on Lufenuron:***

- Health Canada has issued an emergency drug release (EDR) to Cermaq Canada for the use of Lufenuron. Drugs used in salmon aquaculture are approved and managed by Health Canada. **new**
- Lufenuron is used widely and safely in veterinary medicine as a topical flea/parasite preventative for dogs and cats. **new**
- DFO was not involved in the application or review process for the Lufenuron EDR but we were notified by Cermaq Canada of its use in their sea lice mitigation plan. DFO supports the use of varied treatment applications to ensure that sea lice resistance to available drugs does not become a widespread problem. Varied treatment choices are consistent with a responsible integrated pest management approach to sea lice mitigation. **new**

**From:** Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>

**Sent:** May-14-19 11:42 AM

**To:** McCorquodale, Brenda <[Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)>; Imbeau, Michelle <[Michelle.Imbeau@dfo-mpo.gc.ca](mailto:Michelle.Imbeau@dfo-mpo.gc.ca)>; Doucette, Claire <[Claire.Doucette@dfo-mpo.gc.ca](mailto:Claire.Doucette@dfo-mpo.gc.ca)>

**Cc:** McConnachie, Sarah <[Sarah.Mcconnachie@dfo-mpo.gc.ca](mailto:Sarah.Mcconnachie@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>

**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Hi Michelle,

I would add the highlighted bullets below and yes I think we should include the info on Lufenuron.....I will send some up to date audit numbers for sites shortly to add. Thx Adrienne

- In British Columbia, Fisheries and Oceans Canada (DFO) has implemented a strict regulatory regime to ensure that the industry operates in an environmentally sustainable manner, minimizing the risk to wild fish stocks and aquatic ecosystems.
  - The regulations, environmental management requirements and compliance and monitoring activities that are in place to ensure that the industry operates in a sustainable manner are available on the DFO website under Aquaculture in British Columbia <http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.html>.
  - DFO has been monitoring and analyzing sea lice data since 2011 for indication of resistance to the emamectin benzoate (SLICE). Prior to 2017, more than 95 percent of SLICE treatments in the Clayoquot area were considered to be effective.
  - During the outmigration this year in 2019 there has been three farms of there has been constant communications between the DFO veterinarian and Cermaq veterinarian, there have been three farms out of nine that were over threshold in the outmigration period. Responses to the over thresholds have been dealt with through accelerated harvest or immediate Hydrogen peroxide treatments to DFO's satisfaction, harvest rates have been at a level to ensure that overall sea lice abundance has decreased as required in the Aquaculture Conditions of Licence.
  - Prior to restocking farm sites in Clayquot Sound DFO worked with Cermaq to ensure new smolts were treated with Lufenuron before entering the sea.
  - When used to treat salmon, it is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities prior to transfer to marine sites. **New**
  - Upon ocean entry, the fish should be protected from sea lice infestation for up to 6 to 9 months, thus reducing reliance on and other treatments that may be stressful to fish. **new**
  - Sea Lice numbers in the fish treated with Lufenuron has been far below threshold during the outmigration period, DFO biologist will be in the Clayquot area in early June to audit the lice numbers at 5 of the 8 remaining Cermaq sites as part of the Fish health audit and surveillance program.
- 
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area. **Approved**
  - In Clayoquot sound over the winter/spring of 2017-2018, the typical drop in salinity that comes with rains did not occur. This higher salinity resulted in increased lice production in the region and exacerbated the lice levels on farms. **Approved**
  - In early 2018, Fisheries and Oceans Canada (DFO) collected sea lice from Cermaq Canada's Bawden site in the Clayoquot area and sent them to the BC Centre for Aquatic Health Sciences for analysis, which confirmed emamectin benzoate (SLICE®) resistance. **Approved**
  - Due to continuing high ocean salinity in 2019, there is concern that sea lice levels may once again be high during the critical juvenile outmigration period this spring. DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the outmigration period and that its licence requirements are understood and followed. **New**

- Under the Pacific Aquaculture Regulations, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea lice abundance at these facilities. **approved**
- Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year. Motile lice are those at the free-moving stages of their life cycle. **Approved**
- Health Canada has issued an emergency drug release (EDR) to Cermaq Canada for the use of Lufenuron. Drugs used in salmon aquaculture are approved and managed by Health Canada. **new**
- Lufenuron is used widely and safely in veterinary medicine as a topical flea/parasite preventative for dogs and cats. **new**
- DFO was not involved in the application or review process for the Lufenuron EDR but we were notified by Cermaq Canada of its use in their sea lice mitigation plan. DFO supports the use of varied treatment applications to ensure that sea lice resistance to available drugs does not become a widespread problem. Varied treatment choices are consistent with a responsible integrated pest management approach to sea lice mitigation. **new**

#### ***Responsive on results of investigation***

- The Department has reviewed Cermaq Canada's sea lice management practices in this region and, in March 2019, issued a warning letter to Cermaq Canada Ltd. for violation of certain conditions of licence. In total, 7 compliance issues were found. **new**
- DFO is working closely with Cermaq Canada staff to ensure that the company is prepared for the upcoming wild salmon out migration period and that its licence requirements are understood and followed. **new**

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**From:** [REDACTED]  
**Sent:** Monday, May 13, 2019 1:03 PM  
**To:** 'media.xncr@dfo-mpo.gc.ca';  
**Subject:** CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Greetings

I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island.

In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound . It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq).

1. Can you tell me what your teams are finding in terms of sea lice infection rate in these areas? Do you have teams out there monitoring and tracking the outbreak?
2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?

s.19(1)

3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?
4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?

Hoping to get some answers to my questions by 4pmEST Tuesday May 14<sup>th</sup>.

Thank you in advance

[REDACTED] / CTV National

s.19(1)

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 10:21 AM  
**To:** Rainer, Michelle; Patirana, Anoma; Paylor, Adrienne  
**Subject:** RE: For approval: sea lice inquiry

I'll look at it now and get back to you asap. We are dividing and conquering due to multiple demands.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 10:19 AM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** For approval: sea lice inquiry

Hi Anoma and Adrienne,  
How is this? Anoma, I left space for you to add info on updates to COLs; just a couple of lines. I think we want to keep it simple and focused on our key messages.

**Issue:** [REDACTED] / CTV National [REDACTED]. I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island. In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound. It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq). Reporter has 4 questions.  
**Deadline:** May 15, 1:00 p.m. PST  
**Approved by:**

**Response:**

### Background on sea lice and management

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. Just as head lice has infected humans for millennia, sea lice can infect fish, both wild and farmed. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.

**Approved**

s.19(1)

- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. **Approved**
  - The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area. **Approved**
1. **Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**
    - DFO does some monitoring of wild juvenile salmon for sea lice, but our focus is on monitoring lice at salmon farms through our audit and reporting program. By monitoring lice levels at farms we can get a picture of overall levels in an area. This also gives us the ability to require sea lice management, treatment and mitigation measures at farms when lice levels are high. This allows us to manage potential impacts to wild salmon, particularly during the important juvenile outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).
    - Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
    - For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.
  2. **What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**
    - DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels. **new**
  3. **The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**
    - DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
    - Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.
  4. **Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**



**Anoma to add**

**No information has been removed or severed from this page**

## Patirana, Anoma

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**From:** Paylor, Adrienne  
**Sent:** May-15-19 10:34 AM  
**To:** Webb, Allison; Higgins, Mark; Patirana, Anoma  
**Cc:** Manchester, Howie  
**Subject:** FW: Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms

For anyone working on the ecojustice sea lice letter Howie has provided some info on the transfer referred to on page 4 about Nooka to Broughton. There were no sea lice issues when the fish were moved in May 2016 but resistance issues developed later that fall in Nov. Howie checked what happened at Noo-la in the broughton and no signs of resistance occurred. If you have any more questions ask Howie.

Thx Adrienne

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**From:** Manchester, Howie  
**Sent:** May-14-19 4:22 PM  
**To:** Paylor, Adrienne; Waddington, Zac; Sandberg, Krista; McConnachie, Sarah  
**Cc:** Taekema, Bernie John  
**Subject:** RE: Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms

Hi Adrienne,

Regarding your question on the transfer of fish from Esperanza and Steamer on the West Coast to Noo-la in 2016.

- This was the last time fish have been transferred marine to marine from the West coast to the east coast of the island.
- The fish in question at Esperanza and Steamer entered salt water in September/October 2015.
- Transfers from Esperanza and Steamer to Noo-la occurred in April/May 2016, lice levels from the time of entry to transfer were very low, and there was no indication of SLICE resistance or sea lice issues at the time of transfer ( ie. SLICE had not been used on these fish that were transferred)
- Sea lice levels did not increase above threshold at Esperanza and Steamer until July 2016 although an increase was noted in their June report.
- No treatment was possible at these sites due to low oxygen and plankton issues in August.
- SLICE was initiated in September 2016.
- Bioassays conducted after November after the September single treatment indicated tolerance to SLICE.

Howie

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**From:** Paylor, Adrienne  
**Sent:** May-14-19 9:46 AM  
**To:** Manchester, Howie; Waddington, Zac; Sandberg, Krista; McConnachie, Sarah  
**Cc:** Taekema, Bernie John  
**Subject:** FW: Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms

s.19(1)

FYI. We can anticipate a required response coming from the minister's office soon.

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**From:** [REDACTED]  
**Sent:** May-13-19 4:07 PM  
**To:** Delaney, Paula; Brenda.McCorquodale@dfo-mpo.gc.ca; McConnachie, Sarah; Paylor, Adrienne  
**Subject:** FW: Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms

Good afternoon,

I am forwarding the attached letter to you because you were listed as alternative contacts in auto-response emails from either Ms. Webb or Dr. Waddington.

Regards,

[REDACTED]

**From:** [REDACTED]  
**Sent:** Monday, May 13, 2019 4:00 PM  
**To:** 'min@dfo-mpo.gc.ca' <min@dfo-mpo.gc.ca>  
**Cc:** 'Andrew.Thomson@dfo.mpo.gc.ca' <Andrew.Thomson@dfo.mpo.gc.ca>; 'Allison.Webb@dfo-mpo.gc.ca' <Allison.Webb@dfo-mpo.gc.ca>; 'Zac.Waddington@dfo-mpo.gc.ca' <Zac.Waddington@dfo-mpo.gc.ca>; 'Ian.Keith@dfo-mpo.gc.ca' <Ian.Keith@dfo-mpo.gc.ca>; 'Neil.Jensen@dfo-mpo.gc.ca' <Neil.Jensen@dfo-mpo.gc.ca>; [REDACTED]  
**Subject:** Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms

Dear Minister Wilkinson,

Please find attached a letter of today's date drafted on behalf of [REDACTED] regarding the Department of Fisheries and Oceans ("DFOs") efforts to address excessive sea lice infection on BC-based salmon farms.

In short, through the *Access to Information Act* ("ATIA") [REDACTED] has obtained communications between DFO officials that confirm the Conditions of Licence for farms are ineffectual in addressing excessive sea lice infection on farms. The communications also suggest infected farmed Atlantic salmon are being transferred from one region to another, likely without consideration of the potential impact on the wild salmon populations migrating past receiving farms.

We look forward to receiving your (or a DFO representative's) response to the questions set out in the letter.

Sincerely,

[REDACTED]  
Barrister & Solicitor | Ecojustice  
390 - 425 Carrall Street, Vancouver, BC V6B 6E3  
T: 604-685-5618 | 1-800-926-7744 ext. [REDACTED]  
C: [REDACTED]  
F: 604-685-7813  
[REDACTED]

This email, including any attachments, is confidential and may be protected by solicitor-client privilege. It is intended only for the use of the person or persons to whom it is addressed. If you have received this communication in error, please destroy the email immediately and notify me by telephone or by email.

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## Patirana, Anoma

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**From:** Patirana, Anoma  
**Sent:** May-15-19 11:10 AM  
**To:** Webb, Allison  
**Cc:** Paylor, Adrienne; McCorquodale, Brenda  
**Subject:** RE: Urgent New Tasking //2019-009-00257/ /SN MIN - Meeting with [REDACTED]  
May 22- Due to RDGO May 16th @ 11AM  
**Attachments:** Scenario-Note-Min Meeting\_[REDACTED].PRV policy\_May 2019\_v2\_CLEAN.docx

Hey Allison, here is the SN we drafted for this meeting. It includes input from AMD (NCR) on the FARM and science input on the PRV risk assessments. The sea lice stuff I have just updated but you may want to review as well. Thanks,  
-Anoma

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-15-19 10:53 AM  
**To:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca>; Dickie, Catherine <Catherine.Dickie@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>  
**Cc:** Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Mauro, Richard <Richard.Mauro@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Davis, Neil <Neil.Davis@dfo-mpo.gc.ca>  
**Subject:** RE: Urgent New Tasking //2019-009-00257/ /SN MIN - Meeting with [REDACTED] May 22- Due to RDGO May 16th @ 11AM

Sorry, we already have a draft with Science input so if Science doesn't mind, we'll take responsibility for this given the short timeframes.

Please let us know.

Thanks,  
Allison

s.19(1)

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 10:50 AM  
**To:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca>; Dickie, Catherine <Catherine.Dickie@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>  
**Cc:** Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Mauro, Richard <Richard.Mauro@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>

**Subject:** RE: Urgent New Tasking //2019-009-00257/ /SN MIN - Meeting with [REDACTED] May 22- Due to RDGO May 16th @ 11AM

Carmel/Lesley – Do you want us to take over the lead on this SN as Lesley and Brenda are in the meeting with Namgis and unavailable to work on this and it's due at 11am tomorrow in the RDGO?

Please advise as Anoma and I could try to get this done asap and send back out, but if Science would like to lead, that's ok. Just trying to help with limited staff available.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <[DFO.PAC\\_RDGExecCorrespondence-ExecCorrespondenceDGR\\_PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC_RDGExecCorrespondence-ExecCorrespondenceDGR_PAC.MPO@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, May 15, 2019 10:46 AM  
**To:** Dickie, Catherine <[Catherine.Dickie@dfo-mpo.gc.ca](mailto:Catherine.Dickie@dfo-mpo.gc.ca)>; MacDougall, Lesley <[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)>  
**Cc:** Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>; Mauro, Richard <[Richard.Mauro@dfo-mpo.gc.ca](mailto:Richard.Mauro@dfo-mpo.gc.ca)>; PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <[DFO.PAC\\_RDGExecCorrespondence-ExecCorrespondenceDGR\\_PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC_RDGExecCorrespondence-ExecCorrespondenceDGR_PAC.MPO@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; McCorquodale, Brenda <[Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)>  
**Subject:** Urgent New Tasking //2019-009-00257/ /SN MIN - Meeting with [REDACTED] May 22- Due to RDGO May 16th @ 11AM  
**Importance:** High

Hi there,

The following docket is for processing for the Minister

**Lead:** PAC – Science (Lesley MacDougall) Catherine – Lesley has already starting on the Sea Lice deck that is being requested.

Input Required From:

- PAC-FM (Allison Webb and Brenda McCorquodale)
- AE (Roderick Haesevoets and John Campbell)
- EOS (Waiting for SME)
- [REDACTED]

s.19(1)

s.23

GCCMS #: 2019-009-00257

Routed to Science and FM in GCCMS

Please create a scenario note for the Minister:

The Minister will be meeting with [REDACTED] on the afternoon of May 22<sup>nd</sup> in Vancouver (Executive Boardroom). Please include the following:

- Background information on Jonathan Moore from SFU.
- The deck on Sea Lice that is already underway following the Ministerial brief of May 14<sup>th</sup>.

- Departmental official who should attend the meeting, along with the RDG, as confirmed by the RDG are Lesley MacDougall and [REDACTED] (Please include this information in the note).

**Please submit your documents to RDGO no later than May 16<sup>th</sup> @ 11:00AM**

Thank you,

**Ashley Church**

Correspondence Officer | Agente de correspondance  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Telephone | Téléphone (604) 666-3303  
DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca

---

**From:** Perrier, Guillaume <[Guillaume.Perrier@dfo-mpo.gc.ca](mailto:Guillaume.Perrier@dfo-mpo.gc.ca)>

**Sent:** May-15-19 9:32 AM

**To:** Church, Ashley <[Ashley.Church@dfo-mpo.gc.ca](mailto:Ashley.Church@dfo-mpo.gc.ca)>; Fogliato, Cara <[Cara.Fogliato@dfo-mpo.gc.ca](mailto:Cara.Fogliato@dfo-mpo.gc.ca)>; Johal, Sharan <[Sharan.Johal@dfo-mpo.gc.ca](mailto:Sharan.Johal@dfo-mpo.gc.ca)>; PAC\_RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <[DFO.PAC\\_RDGExecCorrespondence-ExecCorrespondenceDGR\\_PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC_RDGExecCorrespondence-ExecCorrespondenceDGR_PAC.MPO@dfo-mpo.gc.ca)>

**Cc:** XNCR-Grp, DMO Correspondence & Briefing Unit <[DMO.CBUnit@dfo-mpo.gc.ca](mailto:DMO.CBUnit@dfo-mpo.gc.ca)>; DFO.F ADMO AE Correspondance / Correspondance EA SMA F.MPO <[DFO.FADMOAECorrespondance-CorrespondanceEASMAF.MPO@dfo-mpo.gc.ca](mailto:DFO.FADMOAECorrespondance-CorrespondanceEASMAF.MPO@dfo-mpo.gc.ca)>; McGill, Stephanie <[Stephanie.McGill@dfo-mpo.gc.ca](mailto:Stephanie.McGill@dfo-mpo.gc.ca)>; Northcott, Jennifer <[Jennifer.Northcott@dfo-mpo.gc.ca](mailto:Jennifer.Northcott@dfo-mpo.gc.ca)>; Young, Susan <[Susan.Young@dfo-mpo.gc.ca](mailto:Susan.Young@dfo-mpo.gc.ca)>; Gallo, David <[David.Gallo@dfo-mpo.gc.ca](mailto:David.Gallo@dfo-mpo.gc.ca)>; Legal.Correspondence / Correspondance.Juridique (DFO-MPO) <[Legal.Correspondence@dfo-mpo.gc.ca](mailto:Legal.Correspondence@dfo-mpo.gc.ca)>; Milito, Selena (DOJ) <[Selena.Milito@justice.gc.ca](mailto:Selena.Milito@justice.gc.ca)>; O'Brien, Jackie <[Jackie.O'Brien@dfo-mpo.gc.ca](mailto:Jackie.O'Brien@dfo-mpo.gc.ca)>; Pastorek, Doug <[Doug.Pastorek@dfo-mpo.gc.ca](mailto:Doug.Pastorek@dfo-mpo.gc.ca)>

**Subject:** Urgent New Tasking//2019-009-00257//SN MIN, May 22 - Meeting with [REDACTED]

**Importance:** High

Hello Pacific,

Please process the following urgent docket:

s.19(1)  
s.21(1)(a)  
s.21(1)(b)  
s.23

**Title:** Meeting with [REDACTED]

**Deliverable:** Scenario Note for the Minister

**Lead:** PAC

**Input:** AE,EOS, [REDACTED]

**Departmental Support/SME:** Yes (please provide a recommendation of maximum 2 departmental representatives)

**GCCMS #:** 2019-009-00257

**BF in DMO:** Friday May 17, 2019 at 15:00 Eastern Standard Time FIRM

**Instructions / Supplementary Information:** Please include background information on Jonathan Moore from SFU. When submitting this tasking, please include the deck on Sea Lice that is already underway following the Ministerial brief of May 14<sup>th</sup>.

\*\*\*\*\*

If you require an extension or clarification after consulting with your Group's program(s) and/or manager, please email [DMO.CBUnit@dfo-mpo.gc.ca](mailto:DMO.CBUnit@dfo-mpo.gc.ca)

\*\*\*\*\*

Guillaume Perrier

Correspondence Officer | Agent de correspondance  
Deputy Minister's Office | Cabinet du sous-ministre  
200 Kent Street, Ottawa, Ontario, K1A 0E6  
Tel: (613) 993-0678  
Email: [Guillaume.perrier@dfo-mpo.gc.ca](mailto:Guillaume.perrier@dfo-mpo.gc.ca)

><(((°> ><(((°> ><(((°> ><(((°> ><(((°> ><(((°> ><(((°> ><(((°>

**From:** Hill, Johanna <[Johanna.Hill@dfo-mpo.gc.ca](mailto:Johanna.Hill@dfo-mpo.gc.ca)>

**Sent:** May-15-19 12:15 PM

**To:** XNCR-Grp, DMO Correspondence & Briefing Unit <[DMO.CBUnit@dfo-mpo.gc.ca](mailto:DMO.CBUnit@dfo-mpo.gc.ca)>

**Cc:** Johal, Sharan <[Sharan.Johal@dfo-mpo.gc.ca](mailto:Sharan.Johal@dfo-mpo.gc.ca)>; DFO.F ADMO AE Correspondance / Correspondance EA SMA F.MPO <[DFO.FADMOAECorrespondance-CorrespondanceEASMAF.MPO@dfo-mpo.gc.ca](mailto:DFO.FADMOAECorrespondance-CorrespondanceEASMAF.MPO@dfo-mpo.gc.ca)>; Pastorek, Doug <[Doug.Pastorek@dfo-mpo.gc.ca](mailto:Doug.Pastorek@dfo-mpo.gc.ca)>; O'Brien, Jackie <[Jackie.O'Brien@dfo-mpo.gc.ca](mailto:Jackie.O'Brien@dfo-mpo.gc.ca)>

**Subject:** Urgent new tasking

**Please task the following:**

Title: Meeting with [REDACTED] (tentative Wednesday, May 22)

Deliverable: Scenario Note for the Minister

Lead: PAC

Input: AE, Science, [REDACTED]

Departmental Support: Yes (please provide a recommendation of maximum 2 departmental representatives)

BF in DMO: Friday, May 17, 2019 @ 15:00 FIRM

Instructions / Supplementary Information: Please include background information on Jonathan Moore from SFU. When submitting this tasking, please include the deck on Sea Lice that is already underway following the Ministerial brief of May 14<sup>th</sup>.

s.19(1)

s.23



Approved by SADM

Docket #: 20##-###-#####  
Security Classification: UNCLASSIFIED

## **SCENARIO NOTE**

MEETING WITH [REDACTED]  
VANCOUVER, BC

### **Overview**

You are scheduled to meet with [REDACTED] on Tuesday, May 22, 2019 (exact time TDB). The purpose of the meeting is to listen to [REDACTED] suggestions for how DFO's policy of not requiring testing of salmon smolts for *Piscine Orthoreovirus* (PRV) prior to their transfer to the marine environment ("PRV policy") can be improved to reflect a precautionary approach, as directed by Judge Strickland's decision in February 2019.

[REDACTED] is a critic of salmon aquaculture with a significant following in BC and beyond. Her research is supported by environmental organizations opposed to salmon farming, such as the Raincoast Research Society and the Pacific Salmon Foundation. [REDACTED] has brought numerous lawsuits against the Minister regarding the regulation of the aquaculture industry in BC and, most recently, concerning DFO's "PRV policy".

Your overall objective for the meeting is listen to [REDACTED] concerns and to demonstrate that the Department has not predetermined its decision on the "PRV policy", and is engaging in a good faith reconsideration of the policy.

This meeting will provide you the opportunity to share a high level perspective on a renewed approach for considering PRV in s. 56 *Fishery (General) Regulations* (FGR) transfer licence decisions, including:

1. Framework for Aquaculture Risk Management (FARM) and;
2. Conclusions of the 2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon.

[REDACTED] may also raise concerns regarding her finding of elevated sea lice levels in recently sampled wild fish near two salmon farms in the Broughton Archipelago, and the potential attribution of wild/farmed fish interactions to this finding.

s.19(1)

### **Framework for Aquaculture Risk Assessment (FARM)**

The FARM provides a more structured and transparent process for aquaculture decision-making, including explicit consideration of the precautionary approach and risk mitigation. It is modeled after the Sustainable Fisheries Framework (SFF) and based on guidance from the Privy Council Office and Departmental experience in applying the precautionary approach to fisheries management. The FARM is supported by a series of documents providing detailed information



on how and when precaution is applied, as well as how effects of aquaculture are considered and managed.

### **Minister's Objectives**

To communicate to [REDACTED] that the FARM positions the department to increase transparency around all DFO aquaculture decision-making processes and improve stakeholder and Indigenous groups consultation throughout the entire process.

### **Key Messages**

- **The FARM will be posted for public consultation before the end of May and I invite you to submit your comments.**
- **The Government of Canada is committed to ensuring aquaculture activities are undertaken in a manner that is environmentally responsible and sustainable.**
- **The Government of Canada is committed to protecting Canada's aquatic ecosystems and fisheries, and sound scientific advice plays an important role in informing policy choices on the responsible management of our resources.**
- **This is consistent with my statement of additional measures announced in 2018 to ensure the environmental sustainability of finfish aquaculture, including a new study on the alternative technologies for aquaculture, moving towards an area-based approach to aquaculture management, developing a framework for aquaculture risk management based on the precautionary approach and creating a single comprehensive set of regulations: the General Aquaculture Regulations.**

### **2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon**

From January 28 to 30, 2019, the Canadian Science Advisory Secretariat (CSAS) conducted a meeting to review scientific evidence and to provide science advice on the risk to Fraser River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands area, British Columbia.

The scientific experts who peer reviewed the data and risk assessment reached a consensus that

Classification

PRV does not pose more than a minimal risk to the viability of Fraser River sockeye salmon conservation units, or species biodiversity. The assessment was conducted based on the latest Canadian and international data. The formal PRV Risk assessment will have two components – “science advice” which is currently going through peer review and two supporting documents (risk assessment and science review) which are expected to be released in May 2019.

### **Minister's Objectives**

Provide a high level understanding of the PRV risk assessment outcome and robustness of the process.

### **Key Messages**

- **The peer review participants reached a consensus that the risk to Fraser River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands is minimal. This aligns with the conclusion of a 2015 CSAS report.**
- **The risk assessment on PRV was peer-reviewed by scientists with expertise in salmon biology, physiology, fish health and epidemiology. This follows the Government of Canada policy and DFO's Canadian Science Advisory Secretariat (CSAS) peer review process for making sound scientific advice.**
- **The peer review included domestic and international scientific experts from government, academia, Indigenous communities, ENGOs, and industry. The advice in the report was developed by consensus.**
- **As there are still some important knowledge gaps in our understanding of PRV, DFO will continue to be vigilant about risks to Fraser River Sockeye. The department will continue its own scientific research on PRV. It will also rely on domestic and international experts in this field, and the peer review process, to apply the best science available when making management decisions for Canada's aquaculture sector.**

s.19(1)

### **Elevated Sea lice levels in wild fish in the Broughton**

██████████ has recently been raising concern on social media about high levels of sea lice present on wild fish in the Broughton Archipelago. She is urging people to contact the Minister directly to demand the ‘removal of all lice infected fish’. Following the requirements in Conditions of Licence, and consistent with the Fish Health Audit and Intelligence Program, regular reporting on farm lice levels are required and audits are being conducted by DFO staff. In

Classification

the month of April nine marine sites were audited by DFO biologists in the Broughton Archipelago, and none had motile sea lice (*L. salmonis*) levels above the reporting threshold of 3 motile lice per fish. [REDACTED] has stated that 90% of young wild salmon near Cermaq's Burdwood and Sir Edmund salmon farms in the Broughton Archipelago are currently infected with sea lice. On May 7<sup>th</sup> DFO field staff audited these two farms and found sea lice levels to be far below threshold.

There is good agreement between lice numbers reported by industry to those recorded on site by DFO audits. At this time facilities in the Broughton have initiated preventative treatment and are in compliance with respect to their sea lice management conditions of licence. Should lice levels not remain under threshold, facilities are required to report any issues and would be required to initiate a secondary plan to reduce lice levels. DFO continues to monitor the situation, but has no concerns that would warrant further action by the Department.

### **Minister's Objectives**

To communicate that DFO takes a precautionary approach to minimizing sea lice levels on farms through mandatory monitoring, mitigation, treating and reporting, and conducts audits/inspections to ensure industry compliance with conditions of licence.

### **Key Messages**

- **Under the *Pacific Aquaculture Regulations*, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea lice abundance at these facilities.**
- **DFO conducts over 45 sea lice audits per year. This information is publicly available and reported on the DFO website.**
- **Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year.**
- **As per standard practice for the Fish Health Audit and Intelligence Program, DFO increases its audits of all active sites during the wild salmon outmigration period.**
- **Recent DFO audits of farms in the Broughton found all sites to be below the 3 motile lice per fish threshold and good agreement between industry reported lice numbers to those recorded by DFO.**

s.19(1)

**Classification**

**No information has been removed or severed from this page**



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Correspondence Routing Slip

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Pêches et Océans Canada

CLASSIFICATION  
GCCMS #: 20##-###-#####  
EKME #: #####

To: Timothy Sargent  
Pour:

Date:

Object: TITLE  
Objet: TITRE

From / Name of DG, Title  
De:

Via: Name of S/ADM, Title

Additional approvals:  
Autre(s) approbation(s):

☐ Material for the Minister  
Documents pour le Ministre

☐ Your Signature  
Votre signature

☐ Information

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors: [please list who was consulted internally]

Distribution: *Please indicate name of people to receive a copy and if prior or following  
the DM approval. (Remove if no Distribution is required)*

Drafting Officer/  
Rédacteur:

NAME (TEL #)/ Director / admin initials

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 11:21 AM  
**To:** Rainer, Michelle  
**Subject:** RE: For approval: sea lice inquiry

Ok for the green line. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, May 15, 2019 11:04 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Subject:** RE: For approval: sea lice inquiry

Thanks, Allison. I added the historic line in green. Can we also please explain what the Fish Health Advisory Committee is and who is on it?

Michelle

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, May 15, 2019 10:44 AM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Subject:** RE: For approval: sea lice inquiry

Adrienne – can you please look at the bullet in the last section re COL. I think that we should be fine to say this, but want to seek your view about this. Has this been discussed at the Fish Health Advisory Committee yet? Call me if you prefer.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, May 15, 2019 10:19 AM  
**To:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>

Cc: Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>

Subject: For approval: sea lice inquiry

Hi Anoma and Adrienne,

How is this? Anoma, I left space for you to add info on updates to COLs; just a couple of lines. I think we want to keep it simple and focused on our key messages.

**Issue:** [REDACTED] / CTV National ([REDACTED]). I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island. In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound. It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq). Reporter has 4 questions.

**Deadline:** May 15, 1:00 p.m. PST

**Approved by:**

**Response:**

#### **Background on sea lice and management**

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. Just as head lice has infected humans for millennia, sea lice can infect fish, both wild and farmed. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment. **Approved**
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area. **Approved**
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. **Approved**
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. **Approved**

**1. Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**

- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO's focus is on monitoring lice at salmon farms through our audit and reporting program to ensure that lice levels are below thresholds. These thresholds are set to protect wild juvenile salmon outmigrating through these areas. Some wild salmon sea lice sampling is also being done by DFO to provide additional data for management purposes. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

- DFO also has the ability to require sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimises potential impacts to wild salmon, particularly during the important juvenile outmigration period.

s.19(1)

- For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.
- 2. **What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**
  - DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels. **new**
- 3. **The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**
  - DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
  - Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.
- 4. **Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**
  - Consistent with our adaptive management approach to aquaculture, DFO is examining data from our fish health audit and surveillance program and considering revising our conditions of license related to sea lice for 2020. As part of these potential changes, DFO will be seeking advice from the Fish Health Advisory Committee which contains a variety of internal and external experts.



## **Patirana, Anoma**

---

**From:** Webb, Allison  
**Sent:** May-15-19 11:40 AM  
**To:** Rainer, Michelle; Patirana, Anoma; Paylor, Adrienne  
**Subject:** RE: For approval: sea lice inquiry

Add the word farm below. We don't have the wild salmon info to provide at this time.

Results of both industry sea lice counts and DFO audits on salmon farms are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 11:20 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: sea lice inquiry

Thanks, Allison. This part looks good. I have concerns about this line, though:

- DFO 's focus is on monitoring lice at salmon farms through our audit and reporting program to ensure that lice levels are below thresholds. These thresholds are set to protect wild juvenile salmon outmigrating through these areas. Some wild salmon sea lice sampling is also being done by DFO to provide additional data for management purposes. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

It makes it sound like we are publicly reporting the results of our wild sampling. I can clarify that it is farmed, but the reporter is really focused on wild monitoring so I think she will ask for these results. Is there anything we can offer? I understand Kerra has done some sampling in Esperanza?

Thanks,  
Michelle

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 11:11 AM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: sea lice inquiry

- Consistent with our adaptive management approach to aquaculture, DFO is examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC.

- DFO is also continuing to work with BC to use integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts on wild fish.

Let's go with these general lines for now and consider a more robust approach after discussions [REDACTED] and internally asap. It is too late to do so for today's deadline. Thanks.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 11:02 AM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Subject:** RE: For approval: sea lice inquiry

Revised and can go up for approval once historic info is added back in. Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
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**Subject:** RE: For approval: sea lice inquiry

Adrienne – can you please look at the bullet in the last section re COL. I think that we should be fine to say this, but want to seek your view about this. Has this been discussed at the Fish Health Advisory Committee yet? Call me if you prefer.

Thanks,  
Allison

s.23

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>

**Sent:** Wednesday, May 15, 2019 10:19 AM

**To:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>

**Cc:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Subject:** For approval: sea lice inquiry

Hi Anoma and Adrienne,

How is this? Anoma, I left space for you to add info on updates to COLs; just a couple of lines. I think we want to keep it simple and focused on our key messages.

**Issue:** [REDACTED] / CTV National ([REDACTED]) I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island. In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound. It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq). Reporter has 4 questions.

**Deadline:** May 15, 1:00 p.m. PST

**Approved by:**

**Response:**

#### **Background on sea lice and management**

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. Just as head lice has infected humans for millennia, sea lice can infect fish, both wild and farmed. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.  
**Approved**
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. **Approved**
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.  
**Approved**
- **ADD BULLET ON HISTORIC INFO to demonstrate low and good compliance**

1. **Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**

- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO's focus is on monitoring lice at salmon farms through our audit and reporting program to ensure that lice levels are below thresholds. These thresholds are set to protect wild juvenile salmon outmigrating through

these areas. Some wild salmon sea lice sampling is also being done by DFO to provide additional data for management purposes. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

- DFO also has the ability to require sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimises potential impacts to wild salmon, particularly during the important juvenile outmigration period.
- For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.
- 2. **What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**
  - DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels. **new**
- 3. **The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**
  - DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
  - Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.
- 4. **Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**
  - Consistent with our adaptive management approach to aquaculture, DFO is examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. As part of these potential changes, DFO will be seeking advice from the Fish Health Advisory Committee which contains a variety of internal and external experts.
- DFO is also continuing to work with BC to use integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts on wild fish.

**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** May-15-19 12:52 PM  
**To:** Webb, Allison  
**Subject:** AMD slides for sea lice deck - to send to Science  
**Attachments:** AMD slides for MINO sea lice deck.pptx; DFO Sea Lice Program - slides May 15\_AEO input.ppt

Hi Allison, I've attached my attempt at re-working the context provided by Adrienne ("AMD slides for MINO sea lice deck"). Her deck is included as well in case I missed any important information.

-Anoma

**Anoma Patirana**

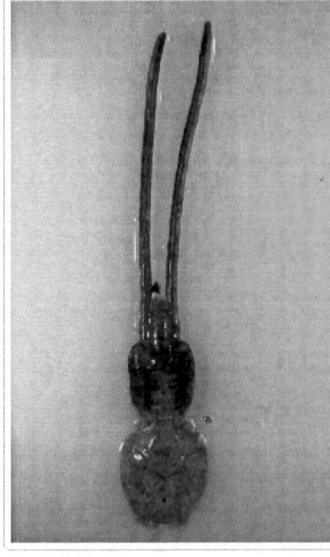
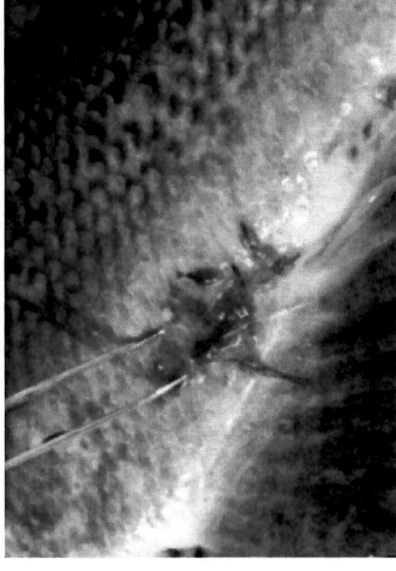
A/Regional Manager, Aquaculture Policy  
Fisheries and Oceans Canada, Pacific Region  
[anoma.patirana@dfo-mpo.gc.ca](mailto:anoma.patirana@dfo-mpo.gc.ca) / Tel: 604-666-9571

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# AMD slides for MINO Sea Lice Deck

# Sea Lice in British Columbia

- Two main species of sea lice occur on Atlantic salmon in BC – *Lepeophtheirus salmonis* (the “salmon louse”) and to a lesser extent *Caligus clemensi* (the “herring louse”)
- Both species are naturally occurring parasites that attach to skin, fins and gills of fish and feed on the mucus and skin
- The distribution of both louse species varies seasonally, annually and regionally on both farmed and wild salmon
- The intensity of sea lice infection varies by species, season and years and is influenced by factors such as water temperature, salinity and ??
- The number of sea lice on farms is influenced by:
  - Age of the salmon and the time in the marine environment
  - location and season
  - Environmental factors (i.e. salinity, proximity to sea lice source) and;
  - Application of sea lice treatments



Sea louse

Photo: S. Robinson (DFO)

# Sea Lice Management in British Columbia

- The operational objectives of DFO's Sea Lice Program are to:
  - Effectively manage sea lice in the farmed salmon population;
  - Protect wild juvenile salmon during their outmigration and;
  - Improve public confidence that sea lice are being appropriately managed on farmed salmon in BC
- In BC, DFO issues licences for marine finfish aquaculture that requires monitoring and intervention, if sea lice thresholds are exceeded
- A sea lice abundance threshold (of an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) is set for licence holders cultivating Atlantic salmon
- Requirements are different for facilities cultivating **Pacific salmon**



# Sea Lice Monitoring – Industry Requirements

- Aquaculture facilities growing Atlantic salmon must reports monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – Jun 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
  - **If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance**

## Sea Lice Monitoring – DFO Audit Program

- DFO conducts sea lice audits at Atlantic facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic sites
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit include and assessment of industries counting sensitivity, sampling procedures and an audit records.

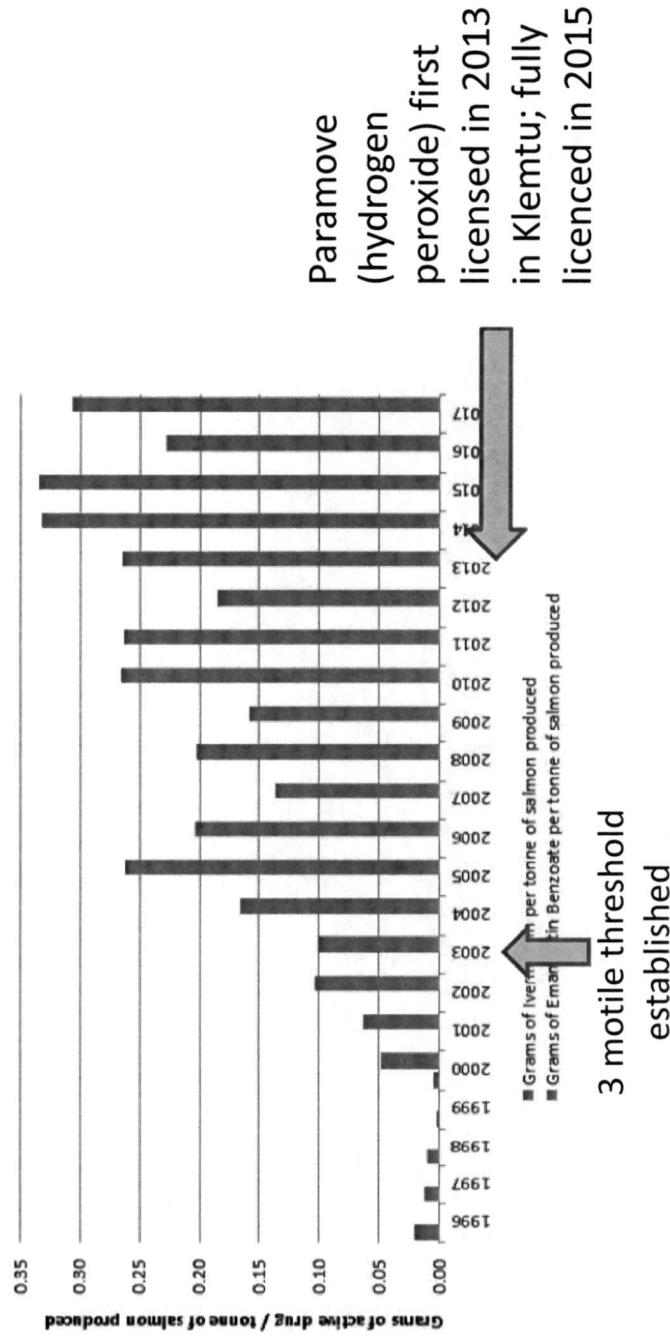
# Sea Lice Resistance

- Resistance is defined as a decreased susceptibility of an organism to a given drug/chemical
- Sea lice have been known to develop resistance to all treatment types: SLICE, organophosphates, pyrethroids, peroxide and even fresh water
- Resistance evolves quickly in the face of selection pressure
- Risk factors:
  - Exposure to sub-therapeutic dosing; Eg. insufficient dose, insufficient treatment duration, disparate feeding, lack of ABM
  - Increased frequency of exposure
- Prevention:
  - Appropriate treatment dose, course and consideration of subsequent lice exposure
  - *Refugia*: maintain susceptible population by avoiding exposure to drug
  - Rotational/combined use of parasiticides with different modes of action (i.e. Integrated Pest Management)

# SLICE Use in British Columbia

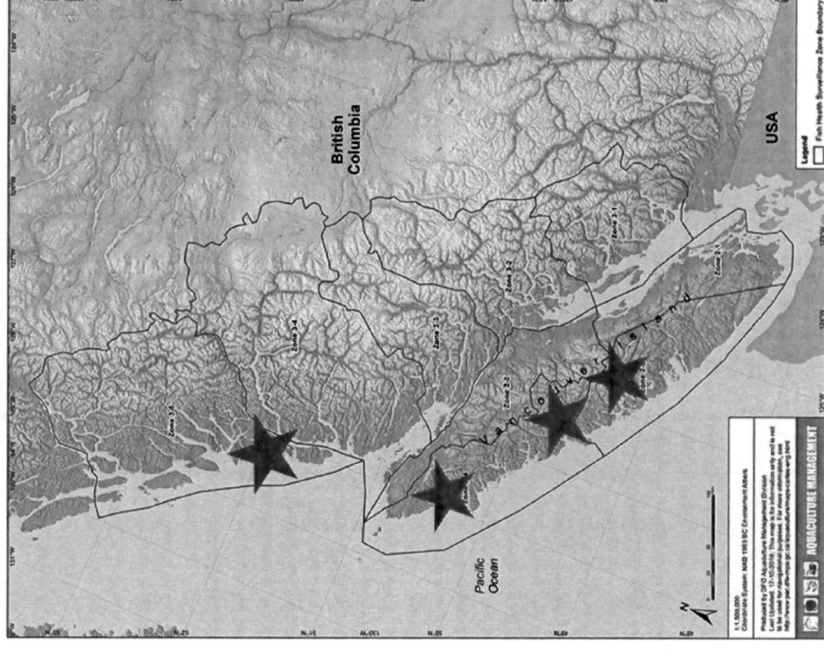
- SLICE (emamectin benzoate) used exclusively as sea lice management tool from 2000-2014

Use of in-feed anti-lice therapeutants in BC salmon aquaculture  
1996 - 2017



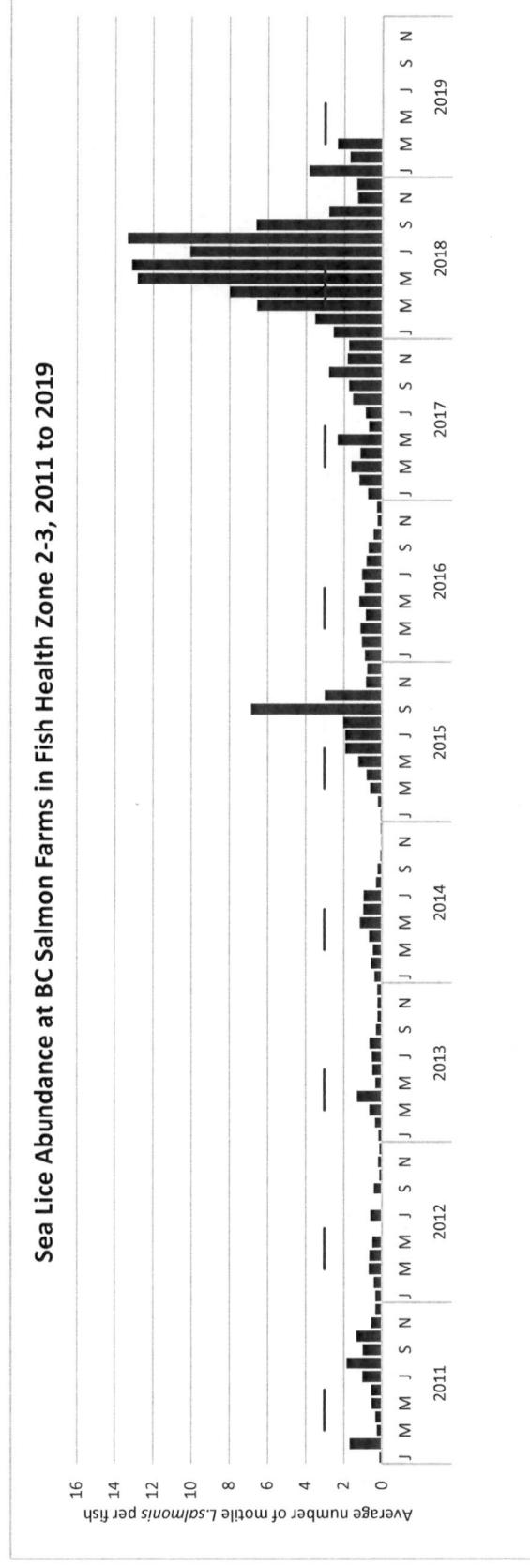
# The Problem of Sea Lice Resistance in BC

- North Pacific basin only area of world without widespread SLICE resistance
- Resistance emerged in Atlantic in mid-2000's and quickly spread to every salmon farming region
  - Genetic resistance now established in farmed and wild Atlantic salmon populations (no known fitness cost)
- SLICE (emamectin benzoate) resistance documented in many areas
  - Klemtu- 2013
  - Quatsino- 2014
  - Esperanza- 2016-2017
  - Clayoquot- 2018



# Sea lice levels in Clayoquot Area (2011-2018)

- High abundances of sea lice were observed in the Clayoquot Sound area in 2018
- There was slice resistance at several facilities that were resolved with rapid harvest and initiation of hydrogen peroxide treatments.

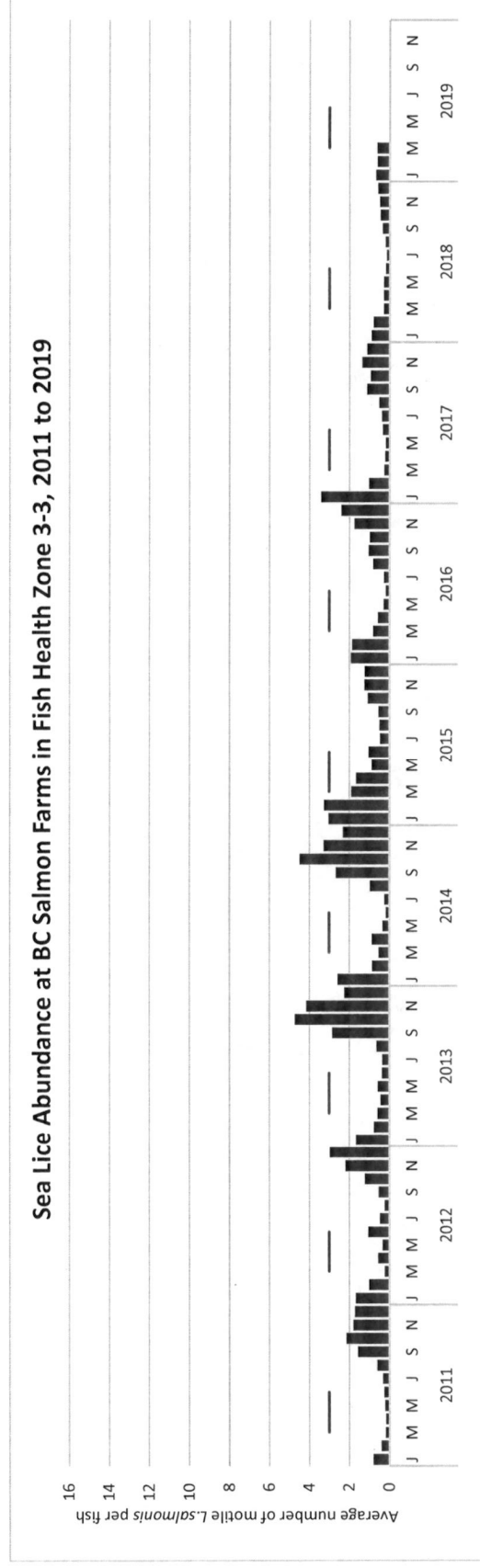


## Current Sea lice levels in Clayoquot Area

- This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1)
- In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction
- Two of the three farms in question have since been harvested out completely and the third will complete harvesting by the end of May
- The remaining Cermaq farms in the Clayquot region have been below threshold levels during the outmigration period

# Sea Lice Levels in the Broughton (2011 – present)

- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period
- DFO audited 9 farms in the Broughton in April and another two in May which were all below threshold.





# Future Directions on Sea Lice Management

- Evaluation of new regulatory tools that best manage risk to wild fish
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
  - Consideration of farm and area level cumulative effects
  - Comparison of different thresholds
  - Model area-based management for lice
- Implementation of other lice removal technologies/methods (hydrolizer, thermolizer, cleaner fish)
- Expanded use of Integrated Pest Management
- Genetic research to determine loci of resistance alleles
- Increased sharing and integration data
- Improved public communication





# DFO Sea Lice Program

Sea Lice Management in British Columbia – Regulatory Perspective

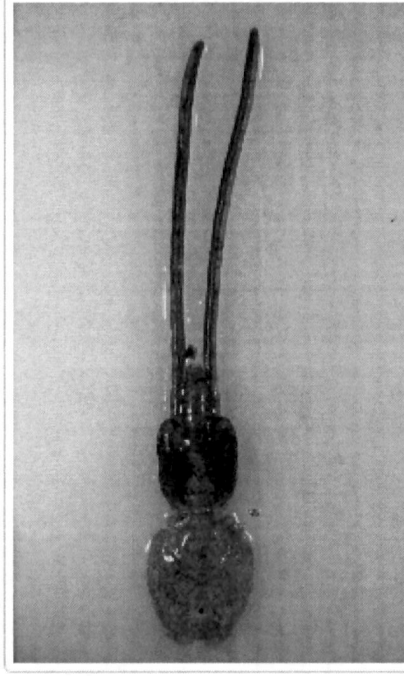
## Operational Objectives of the DFO Sea Lice Program

- To effectively manage sea lice in the farmed salmon population
- To protect wild juvenile salmon during their outmigration
- To improve public confidence that sea lice are being appropriately managed on farmed salmon in BC

## **Federal Aquaculture**

## **Conditions of Licence**

### **Required Sea Lice (SL) Monitoring for Atlantic Salmon**



Sea louse

Photo: S. Robinson (DFO)

#### **SL Monitoring During the Wild Salmon Outmigration (Mar/Apr/May/Jun)**

- The licence holder cultivating Atlantic salmon must carry out a sea lice abundance assessment every two weeks, at minimum, for fish held in containment structures for more than 30 calendar days.

#### **SL Monitoring Outside the Outmigration Window (July to end of Feb)**

- The licence holder cultivating Atlantic salmon must carry out a sea lice abundance assessment once every month for fish held in containment structures for more than 30 calendar days.



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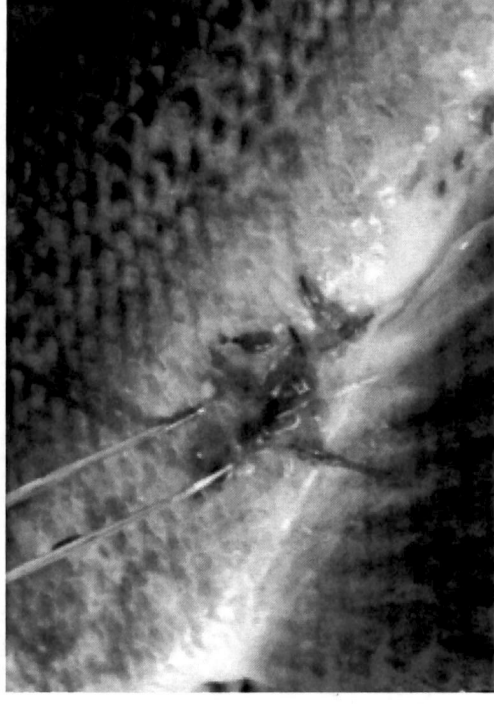
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Canada

## **Federal Aquaculture Conditions of Licence**

### **Sea Lice Abundance Threshold**

The threshold is an average of 3 motile *Lepeophtheirus salmonis* per fish (20 fish sampled, from each of 3 pens).



Credit: Shawn Robinson, DFO

### **Threshold Exceeded During the Wild Salmon Outmigration (Mar/Apr/May/Jun)**

- a) Within 7 days of the discovery, notify the department of the abundance and the planned response; and
- b) within 15 days, implement a plan to reduce the lice inventory.

### **Threshold Exceeded Outside the Outmigration Window (July to end of Feb)**

- a) Increase monitoring to at least once every two weeks;
- b) within 30 days of discovery , notify the department of the abundance and plan to address the exceedance.



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## **Licence Holder Monthly Reporting**

The licence holder must submit monthly reports on the 15th of each month to the Department for the term of their licence. Monthly reporting follows a prescribed template, which is a Appendix VI-A of the current licence.

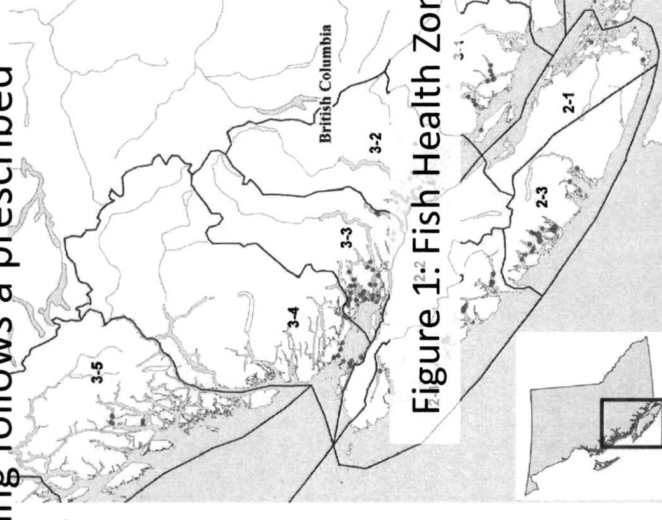


Figure 1: Fish Health Zones

## **Conducting DFO SL Audits**

DFO conducts sea lice audits at Atlantic salmon facilities quarterly

### **How are Sites Selected for a SL Audit?**

1. Sites selected for a Fish Health Audit are randomly selected (stratified by zone);
2. The SL audits are randomly selected from within the pool of identified FH audits.

In Q1, Q3 and Q4 one facility is selected per fish health zone.

In Q2, during the wild salmon outmigration, 50% of active Atlantic salmon farms are selected for audit.



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## Field Work

- In 2017 DFO fish health staff conducted 120 fish health audits. Approximately 4 hours are required for a team of 2 – 3 fish health staff to complete a fish health audit.
  - 850 fresh carcasses were sampled
  - 46 sea lice audits were conducted
  - 124 HMP inspections were performed
- Fish health staff spend approximately 20 days in the field per quarter (80 days per year)
- Aim to perform commercial hatchery inspections within 3 months of proposed transfer
  - At least 25 visits annually



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Canada

Pêches et Océans  
Canada

## Sea Lice Monitoring

- Aquaculture facilities growing Atlantic salmon must reports monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – Jun 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
- DFO conducts sea lice audits at Atlantic facilities quarterly
- In Quarters 1, 3 and 4 DFO conducts one sea lice audit per zone on randomly selected Atlantic facilities already chosen for fish health audit, preference is given to second year class fish.
- In Quarter 2 DFO conducts sea lice audits on 50% of all active Atlantic sites during this quarter.
- DFO's sea lice audit include and assessment of industries counting sensitivity, sampling procedures and an audit records.



Canada

## **Conducting DFO SL Audits**

The DFO Fish Health Audit Program aims at increasing confidence in the accuracy of health and sea lice monitoring data reported by the companies, by comparing farm and zone level results, evaluating methods, and checking on site records.



### **Primary Purposes of the Audit**

- To verify the accuracy and methodology of industry-reported sea lice counts and classifications.
- To assess compliance with conditions of licence related to sea lice monitoring.
- To generate consistent and independent fish level sea lice data.

### **Secondary Functions of the Audit**

- To detect spatial and temporal trends.
- To evaluate the efficacy of treatment or mitigative actions.
- To detect cases where mean lice count is above the threshold.



## Program Results and Reporting Out

### Monthly Sea Lice Abundance Summary

This report is based on the compulsory sea lice counts implemented twice a month during the wild salmon outmigration period (March to June) and once a month during the rest of the year. This report summarizes sea lice abundance for motile *Lepeophtheirus salmonis*, adult female *Lepeophtheirus salmonis*, chalimus stage and motile *Caligus clemensi*.

**Table 1– Monthly Average Sea Lice Abundance by Facility**

Year	Month	Facility Reference Number	Licence Holder	Site Common Name	Fish Health Zone	Number of Counts Performed	Average L. salmonis motiles per fish	Average L. salmonis females per fish	Average chalimus per fish	Average Caligus per fish	Comments	Year Class
2017	January	1144	Cermaq Canada	Burdwood	3-3	2	2.61	0.92	3.16	0.85	Management action underway; Survey methodology may vary from sampling design outlined in licence conditions	1
2017	January	458	Cermaq Canada	Cypress	3-3	1	2.48	1.40	0.92	0.20	Management action planned	Brood
2017	January	869	Cermaq Canada	Maude	3-3	1	0.51	0.18	0.00	0.43	Area management action underway	1
2017	January	728	Cermaq Canada	Sir Edmund Bay	3-3	2	1.85	1.15	0.40	0.21	Area management action underway; Survey methodology may vary from sampling design outlined in licence conditions	2
2017	January	1825	Grieg Seafood BC	Noo-la	3-3	1	6.00	1.32	0.00	2.56	Management action planned	1
2017	January	1839	Grieg Seafood BC	Wa-kwa	3-3	1	2.65	0.75	0.00	2.51	Management action planned	1
2017	January	1586	Marine Harvest Canada	Doctor Islets	3-3	2	2.14	0.53	5.48	0.28	Management action planned	1

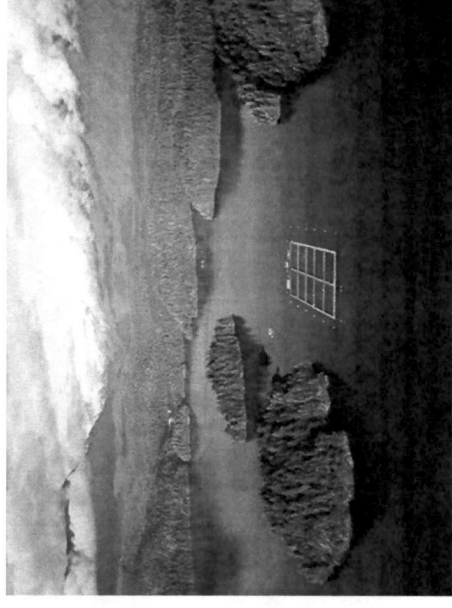


## Public Reports

- Fish Health Monitoring Activities Table - Quarterly
- Mortality by Category Zone Level figure – Quarterly
- Mortality by Category Farm Level Table – Quarterly
- DFO Fish Health (zone level) – Quarterly
- Fish Health Farm-Level Audit (E) - Annual
- Fish Health Management Plan Compliance - Annual
- Sea Lice Audit - Quarterly
- Farm Level Industry Sea Lice Report – Monthly
- Sea Lice Exceedance Graph – Monthly/ Quarterly
- Antimicrobial and Slice Use Graph – Annual
- Introduction and Transfer Fish Health Review Report (NEW)

## **Future Directions**

- Evaluation of new regulatory tools that best manage risk to wild fish
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
  - Consideration of farm and area level cumulative effects
  - Comparison of different thresholds
  - Model area-based management for lice
- Implementation of other lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- Expanded use of IPM
- Genetic research to determine loci of resistance alleles
- Increased sharing and integration data
- Improved public communication



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## **Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** May-15-19 1:22 PM  
**To:** Rainer, Michelle; Webb, Allison; Paylor, Adrienne  
**Subject:** RE: For approval: sea lice inquiry

Hey Michelle, the Fish Health Advisory Committee (FHAC) reports to DFO Pacific Region's Aquaculture Management Division. The FHAC is comprised of fish health subject matter experts tasked with providing information and expert opinion to AMD to inform management decisions. Permanent members include fish health technical experts from each of the major four salmon farming companies, DFO veterinarians, a Salmon Enhancement Program veterinarian, a CFIA veterinarian, technical expert from BC and up to four First Nations fish health technical experts. External academics or DFO science experts can be invited by the FHAC to consult on issues on a case by case basis. The FHAC is moderated by an independent Chair and meets quarterly.

Adrienne, please let me know if I've mischaracterized anything..

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** May-15-19 11:04 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: sea lice inquiry

Thanks, Allison. I added the historic line in green. Can we also please explain what the Fish Health Advisory Committee is and who is on it?

Michelle

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 10:44 AM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: sea lice inquiry

Adrienne – can you please look at the bullet in the last section re COL. I think that we should be fine to say this, but want to seek your view about this. Has this been discussed at the Fish Health Advisory Committee yet? Call me if you prefer.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
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Fisheries and Oceans Canada / Pêches et Océans Canada  
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**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** For approval: sea lice inquiry

Hi Anoma and Adrienne,  
How is this? Anoma, I left space for you to add info on updates to COLs; just a couple of lines. I think we want to keep it simple and focused on our key messages.

**Issue:** [REDACTED] / CTV National ([REDACTED]) I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island. In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound . It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq). Reporter has 4 questions.

**Deadline:** May 15, 1:00 p.m. PST

**Approved by:**

**Response:**

#### **Background on sea lice and management**

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. Just as head lice has infected humans for millennia, sea lice can infect fish, both wild and farmed. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
  - Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.  
**Approved**
  - The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.  
**Approved**
  - Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. **Approved**
  - Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. **Approved**
- 1. Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**
- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
  - DFO 's focus is on monitoring lice at salmon farms through our audit and reporting program to ensure that lice levels are below thresholds. These thresholds are set to protect wild juvenile salmon outmigrating through these areas. Some wild salmon sea lice sampling is also being done by DFO to provide additional data for management purposes. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

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- DFO also has the ability to require sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimises potential impacts to wild salmon, particularly during the important juvenile outmigration period.
- For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.
- 2. **What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**
  - DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels. new
- 3. **The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**
  - DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
  - Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.
- 4. **Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**
  - Consistent with our adaptive management approach to aquaculture, DFO is examining data from our fish health audit and surveillance program and considering revising our conditions of license related to sea lice for 2020. As part of these potential changes, DFO will be seeking advice from the Fish Health Advisory Committee which contains a variety of internal and external experts.

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 2:01 PM  
**To:** MacDougall, Lesley  
**Cc:** Paylor, Adrienne; McConnachie, Sarah; Sandberg, Krista; Patirana, Anoma; Delaney, Paula  
**Subject:** SN draft  
**Attachments:** Scenario-Note-Min Meeting\_ [REDACTED] PRV policy\_May 2019\_v2\_Awedits..docx

Hi Lesley – Here is a draft SN for the meeting. It is pretty long and I can chop if necessary. The sea lice section is focused on the Broughton and I think that Clayoquot could be raised, but didn't have the info on recent audits there to speak confidently to that. I'm ccing others just in case they can help. We are very short staff currently in our fish health area.

Please take a look and let me know if you would like other edits or please make them [REDACTED]  
[REDACTED]

I'll see if I can get Anoma to help me. I'll also see if I can get some help with format. Just worry about the content.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
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Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Approved by SADM

Docket #: 20##-###-#####  
Security Classification: UNCLASSIFIED

## **SCENARIO NOTE**

MEETING WITH [REDACTED]  
VANCOUVER, BC

### **Overview**

You are scheduled to meet with [REDACTED], on Tuesday, May 22, 2019 (time TDB). The purpose of the meeting is to listen to [REDACTED] views on testing of salmon smolts for *Piscine Orthoreovirus* (PRV) prior to their transfer to the marine environment ("PRV policy") and the interpretation of Judge Strickland's decision in February 2019. [REDACTED] may also wish to discuss DFO's approach to the management of sea lice and raise concerns about potential impacts to wild salmon.

[REDACTED] is a critic of salmon aquaculture with a significant following in BC and beyond. Her research is supported by environmental organizations opposed to salmon farming, such as the Raincoast Research Society and the Pacific Salmon Foundation. [REDACTED] has brought numerous lawsuits against the Minister regarding the regulation of the aquaculture industry in BC and, most recently, concerning DFO's "PRV policy".

This meeting will provide you the opportunity to share a high level perspective on a renewed approach for considering PRV in s. 56 *Fishery (General) Regulations* (FGR) transfer licence decisions, including:

1. Framework for Aquaculture Risk Management (FARM) and;
2. Conclusions of the 2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon; and
3. Interpretations of Justice Strickland's decision.

[REDACTED] may also raise concerns regarding her finding of elevated sea lice levels in recently sampled wild fish near two salmon farms in the Broughton Archipelago, and the potential attribution of wild/farmed fish interactions to this finding.

### **Framework for Aquaculture Risk Assessment (FARM)**

The FARM provides a more structured and transparent process for aquaculture decision-making, including explicit consideration of the precautionary approach and risk mitigation. It is modelled after the Sustainable Fisheries Framework (SFF) in applying the precautionary approach to fisheries management. The FARM is supported by a series of documents providing detailed information on how and when precaution is applied, as well as how effects of aquaculture are considered and managed.

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### **Minister's Objectives**

To communicate to [REDACTED] that the FARM will increase transparency around all DFO aquaculture decision-making processes and clarify how precaution is taken into account in decision making.

### **Key Messages**

- **The Government of Canada is committed to ensuring aquaculture activities are undertaken in a manner that is environmentally responsible and sustainable which is why I announced as part of a number of additional measures the development of a Framework for Aquaculture Risk Management in 2018.**
- **The FARM is modelled on the Sustainable Fisheries Framework and consistent with that, will clarify how decisions are made including how precaution is considered within that process.**
- **The FARM will be posted for public consultation shortly and I invite you to submit your comments during the consultation period.**

### **2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon**

From January 28 to 30, 2019, the Canadian Science Advisory Secretariat (CSAS) conducted a meeting to review scientific evidence and to provide science advice on the risk to Fraser River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands area, British Columbia.

The scientific experts who peer reviewed the data and risk assessment reached a consensus that PRV does not pose more than a minimal risk to the viability of Fraser River sockeye salmon conservation units, or species biodiversity. The assessment was conducted based on the latest Canadian and international data. The formal PRV Risk assessment will have two components – “science advice” which is currently going through peer review and two supporting documents (risk assessment and science review) which are expected to be released in May 2019.

### **Minister's Objectives**

Provide a high level understanding of the PRV risk assessment outcome and robustness of the process.

### **Key Messages**

**The peer review participants reached a consensus that the risk to Fraser**

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**River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands is minimal.**

- **The risk assessment on PRV was peer-reviewed by domestic and international scientists with expertise in salmon biology, physiology, fish health and epidemiology. This follows the Government of Canada policy and DFO's Canadian Science Advisory Secretariat (CSAS) peer review process for making sound scientific advice.**
- **As there are still some important knowledge gaps in our understanding of PRV, DFO will continue to be vigilant about risks to Fraser River Sockeye. The department will continue its scientific research on PRV as well as relying on domestic and international experts in this field, and the peer review process, to apply the best science available when making management decisions for Canada's aquaculture sector.**
- **I am interested in better understanding any concerns that you might have with our Canadian Scientific Advisory Secretariat process and/or approach to considering scientific information.**

#### **Interpretation of Justice Strickland's Decision**

Justice Strickland's decision directed DFO to reconsider its approach to testing for PRV and also opined in a number of other areas including the use of aggregates and better explanation of how potential impacts to wild fish have been considered in making decisions on transfers of fish. DFO has been completing significant work to address the court direction and has developed a document on which it intends to consult that explains many of the areas where the court pointed out shortcomings in the current management approach.

#### **Minister's Objective**

To listen to [REDACTED] concerns in the areas where Justice Strickland provided further direction and action for DFO and indicate that the Department does intend to address the court's direction by the deadline of June 4, 2019.

#### **Key Messages**

- **I am interested in hearing your views regarding the court's direction in the recent case related to PRV.**
- **DFO is currently working on an approach that will consider the court**

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**direction including how to better articulate and consider potential impacts to wild fish before decisions on transfers are made.**

- **DFO intends to engage more broadly on this approach before it is finalized to take into account the range of views on this subject.**

#### **Elevated Sea lice levels in wild fish in the Broughton**

██████████ has recently been raising concern on social media about high levels of sea lice present on wild fish in the Broughton Archipelago. She is urging people to contact the Minister directly to demand the 'removal of all lice infected fish'. Documents obtained through the *Access to Information Act* also indicate concerns over a period of time by internal DFO staff related to elevated sea lice levels on certain farms. It is likely that these will be referenced.

Following the requirements in Conditions of Licence, and consistent with the Fish Health Audit and Intelligence Program, regular reporting on farm lice levels are required and audits are being conducted by DFO staff. In the month of April nine marine sites were audited by DFO biologists in the Broughton Archipelago, and none had motile sea lice (*L. salmonis*) levels above the reporting threshold of 3 motile lice per fish. ██████████ has stated that 90% of young wild salmon near Cermaq's Burdwood and Sir Edmund salmon farms in the Broughton Archipelago are currently infected with sea lice. On May 7<sup>th</sup> DFO field staff audited these two farms and found sea lice levels to be far below threshold. She may also raise issues with sites in the Clayoquot Sound area where there have been some issues in the past.

At this time facilities in the Broughton have initiated preventative treatment and are in compliance with respect to their sea lice management conditions of licence. Should lice levels not remain under threshold, facilities are required to report any issues and would be required to initiate a secondary plan to reduce lice levels. Given some limited exceedances in the past and recent advice from Conservation and Protection ██████████ DFO is currently considering a range of options to improve our regulation of the sea lice. This work is fairly preliminary and has not been discussed publicly, but changes are expected in 2020.

#### **Minister's Objectives**

To communicate that DFO takes a precautionary approach to minimizing sea lice levels on farms through mandatory monitoring, mitigation, treating and reporting, and conducts audits/inspections to ensure industry compliance with conditions of licence. All data is publicly available for review to promote transparency of information as well.

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#### **Key Messages**

- **Under the *Pacific Aquaculture Regulations*, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea**

**lice abundance at these facilities.**

- **Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year.**
- **As per standard practice for the Fish Health Audit and Intelligence Program, DFO increases its audits of all active sites during the wild salmon outmigration period. This information is publicly available and reported on the DFO website.**
- **Recent DFO audits of farms in the Broughton found all sites to be below the 3 motile lice per fish threshold and good agreement between industry reported lice numbers to those recorded by DFO.**
- **As part of DFO's adaptive management approach, the department is examining the sea lice data from our fish health audit and intelligence program and working with BC to look at options that better use an integrated approach to pest management. It is also possible that different approaches may be taken under an Area Based Management approach.**

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**page 94**

## **Patirana, Anoma**

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**From:** Patirana, Anoma  
**Sent:** May-15-19 3:05 PM  
**To:** Webb, Allison  
**Subject:** RE: another sea lice graph

I'll check with Krista. I think it might exist somewhere..

---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-15-19 3:02 PM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** RE: another sea lice graph

If we have 2011-2018 that would be good for context, but if not, no worries! Thanks!

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

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**From:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 3:00 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: another sea lice graph

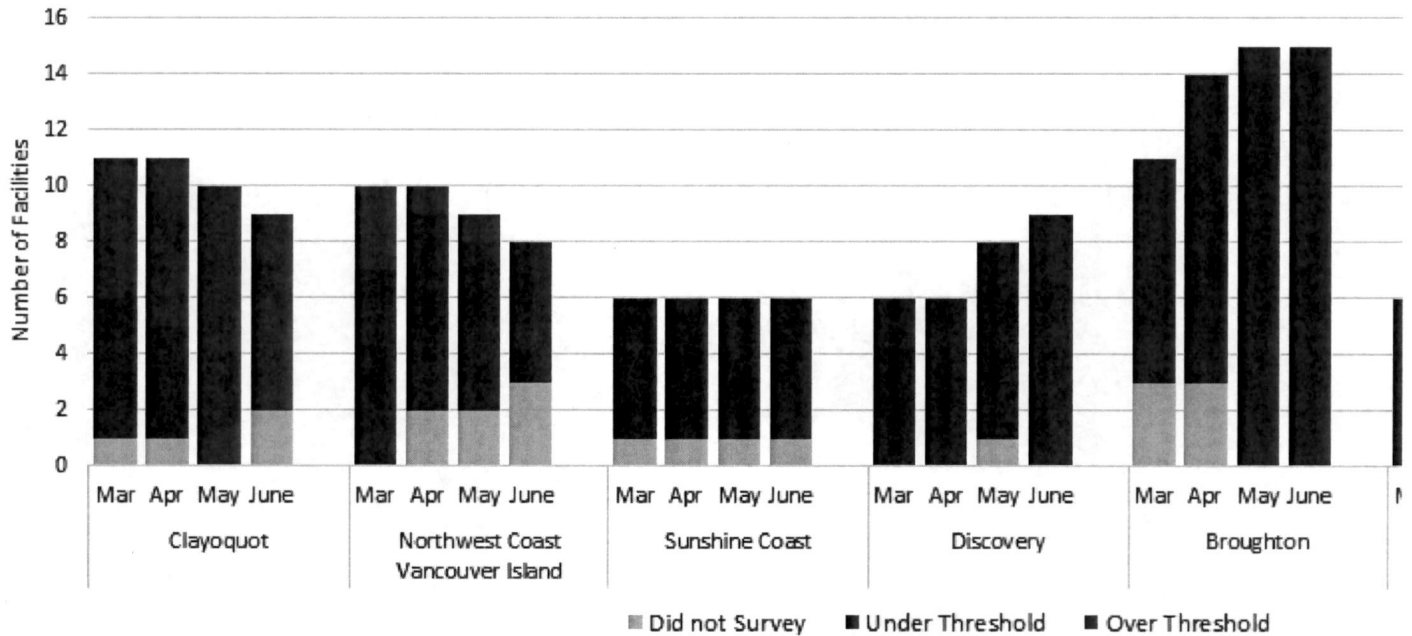
We have it! I'll include as an Annex

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**From:** Sandberg, Krista <Krista.Sandberg@dfo-mpo.gc.ca>  
**Sent:** May-15-19 10:36 AM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** another sea lice graph

This is a graph of 2018 lice performance. I could do this for 2019 but so far we only have march data

## Sea Lice Performance at BC Salmon Farms - 2018



### Krista Sandberg

Senior Data and Public Reporting Coordinator |  
 Coordonnateur principal des rapports publics et de données  
 Aquaculture Management Division | Gestion de l'aquaculture  
 Fisheries and Oceans Canada | Pêches et Océans Canada  
[krista.sandberg@dfo-mpo.gc.ca](mailto:krista.sandberg@dfo-mpo.gc.ca)  
 Office | Bureau 250-286-5835  
 Cellular | Cellulaire [REDACTED]



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## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 3:20 PM  
**To:** MacDougall, Lesley  
**Subject:** RE: Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]

We don't have any vets on staff that week. We will probably need to involve Adrienne.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 12:55 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Fw: Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]  
**Importance:** High

Hi again - I'm assuming you've got this or something like it as well. Since Zac [REDACTED] is there someone else that can participate in his stead?

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 11:03  
**To:** MacDougall, Lesley  
**Cc:** McLeod, Patricia; Dickie, Catherine  
**Subject:** Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]

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Hi Lesley, I participated in the weekly PAC/MINO call with Minister's staff and the following issues were brought to our attention:

1. Ministerial Briefing on PRV and Sea Lice is scheduled for Tuesday May 21<sup>st</sup> @ 9:00 a.m.
2. Minister's is meeting with [REDACTED] on Wednesday May 22<sup>nd</sup> in the afternoon, time TBC.  
Meeting will take place RHQ in the Executive Boardroom.

**Ministerial Briefing on May 21<sup>st</sup>:** I understand from Rebecca that you're working on a DECK for the Ministerial Briefing on sea lice. She also asked that you include a Backgrounder on Sea lice and any recent updates on studies related to Sea Lice [REDACTED] She's also asked that both yourself and Zac Waddington participate in the Ministerial Briefing [REDACTED]



██████████ Please advise if you're comfortable participating in the briefing and I will seek approval from NHQ for the both of you.

Your participation will be via conference call, unless you're in Vancouver and then you can join RDG in her office.

**May 22<sup>nd</sup> meeting with** ██████████ Rebecca has asked that you accompany her to this meeting. Please confirm your availability (and comfort level with this).

Lastly, your office should be receiving a request to prepare a Scenario Note and background information for the meeting of May 22<sup>nd</sup>. This request is coming from our office to Science and FM (I will send you a copy of the incoming request for your info). There will be a pre-brief, scheduled in advance of the May 22<sup>nd</sup> meeting, and Rebecca has asked you, Zac Waddington and Allison Webb participate in this pre-brief. This meeting request will come to you from "PAC RDGExecScheduler", which is the generic email address for Rebecca's Scheduling Assistant.

Any questions or concerns please do not hesitate to contact me.

Thank you

Sharan Johal  
A/Team Lead, Executive Secretariat  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada - Pacific Region/ Pêches et Océans Canada - Région du Pacifique  
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Vancouver, BC/CB V6C 3S4  
Tel: 604-666-7102 / Fax : 604-666-8956  
[sharan.johal@dfo-mpo.gc.ca](mailto:sharan.johal@dfo-mpo.gc.ca)

s.19(1)

s.21(1)(b)

**Patirana, Anoma**

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**From:** Higgins, Mark  
**Sent:** May-15-19 3:22 PM  
**To:** Webb, Allison; Jones, Simon  
**Cc:** Patirana, Anoma; MacDougall, Lesley  
**Subject:** RE: Deck for Science Input on Sea Lice  
**Attachments:** AMD slides for MINO sea lice deck MH.pptx

I have added some changes in red to the slides. I will let Simon send in the answers you are looking for. Mark.

---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-15-19 2:58 PM  
**To:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Subject:** Deck for Science Input on Sea Lice

Please fill in where we have noted in red. Other comments of course are welcome.

Please cc Anoma as I may be out of the office and we need to send this up asap.

Thanks,  
Allison

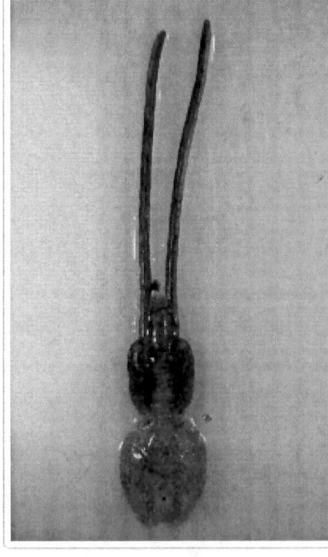
Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
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# **Presentation on DFO Sea Lice Science and Management in BC**

May 15, 2019

# Sea Lice in British Columbia

- Two main species of sea lice occur on Atlantic salmon in BC – *Lepeophtheirus salmonis* (the “salmon louse”) and to a lesser extent *Caligus clemensi* (the “herring louse”)
- Both species are naturally occurring parasites that attach to skin, fins and gills of fish and feed on the mucus and skin
- The distribution of both louse species varies seasonally, annually and regionally on both farmed and wild salmon
- The intensity of sea lice varies by species, season and years and is influenced by factors such as water temperature and salinity
- Science please add info re differences with Norway or Atlantic Canada



Sea louse

Photo: S. Robinson (DFO)

# Science Research and Findings to date

- Science please populate with past, current and future research and  
any findings

# Sea Lice Management in British Columbia

- The operational objectives of DFO's Sea Lice Program are to:
  - Effectively manage sea lice in the farmed salmon population;
  - Protect wild juvenile salmon during their outmigration and;
  - Improve public confidence that sea lice are being appropriately managed on farmed salmon in BC
- DFO issues licences for marine finfish aquaculture that requires monitoring and intervention, if sea lice thresholds are exceeded
- A sea lice threshold of an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish is set for Atlantic salmon farms to protect outmigrating smolts and has been reviewed by Science
- Requirements are different for facilities cultivating Pacific salmon
- DFO publicly reports all sea lice data on a monthly basis

## Sea Lice Monitoring – Industry Requirements

- Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – Jun 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
  - **If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance**

# Sea Lice Monitoring – DFO Audit Program

- DFO conducts sea lice audits at Atlantic salmon facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic salmon sites
- Additionally some limited sea lice sampling on wild fish is being conducted
- (I think this is important, can this be expanded? I believe Kerra collects wild sea lice data)
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic salmon facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit includes an assessment of industry's counting sensitivity, sampling procedures and an audit records.
- To date, there is good agreement between industry reported information and DFO audit data.



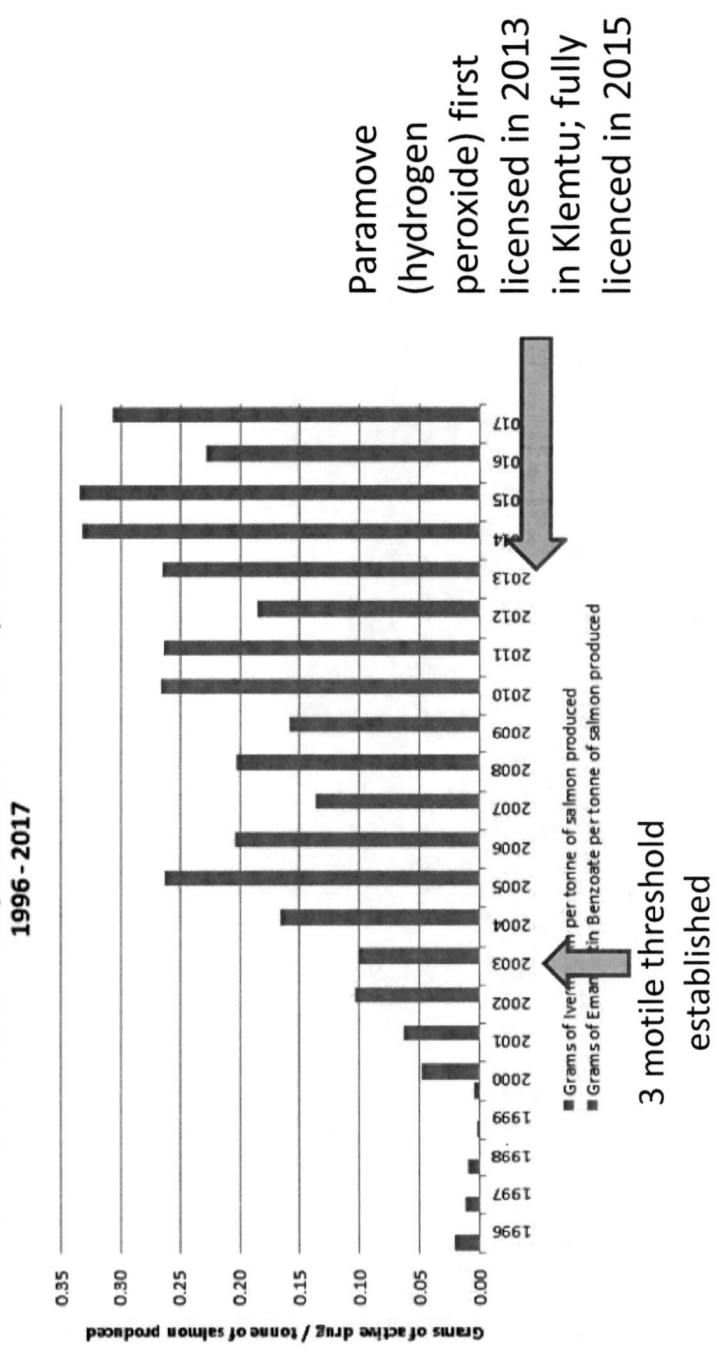
# Sea Lice Resistance

- Resistance is defined as a decreased susceptibility of an organism to a given drug/chemical
- Sea lice have been known to develop resistance to all treatment types: SLICE, organophosphates, pyrethroids, peroxide and even fresh water
- Risk factors:
  - Less than optimal application of treatment such as insufficient dose, insufficient treatment duration
  - Increased frequency of exposure
- Prevention:
  - Appropriate treatment dose, course and consideration of subsequent lice exposure
  - *Refugia*: maintain susceptible population by avoiding exposure to drug
  - Rotational/combined use of parasitocides with different modes of action (i.e. Integrated Pest Management)

# SLICE Use in British Columbia

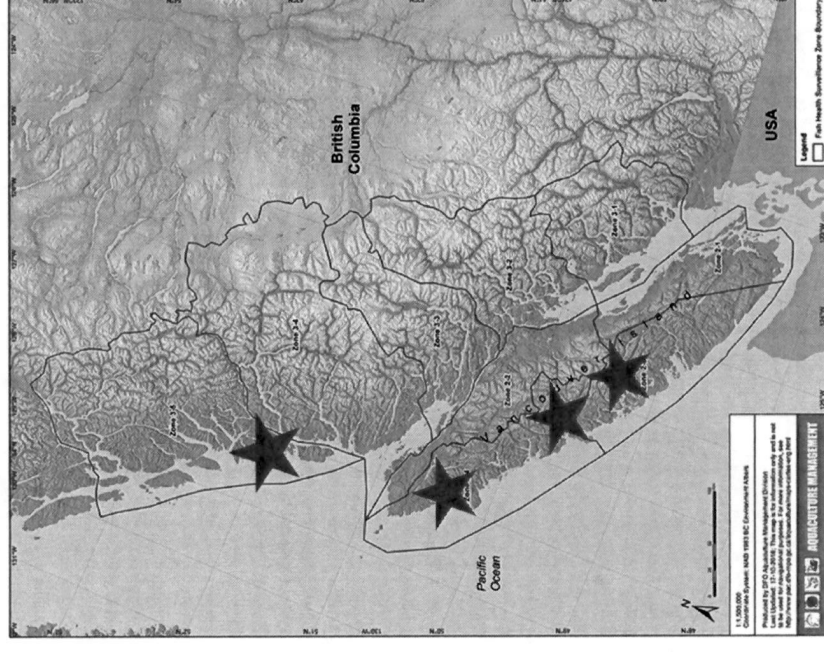
- SLICE (emamectin benzoate) used exclusively as sea lice management tool from 2000-2014

Use of in-feed anti-lice therapeutants in BC salmon aquaculture 1996 - 2017



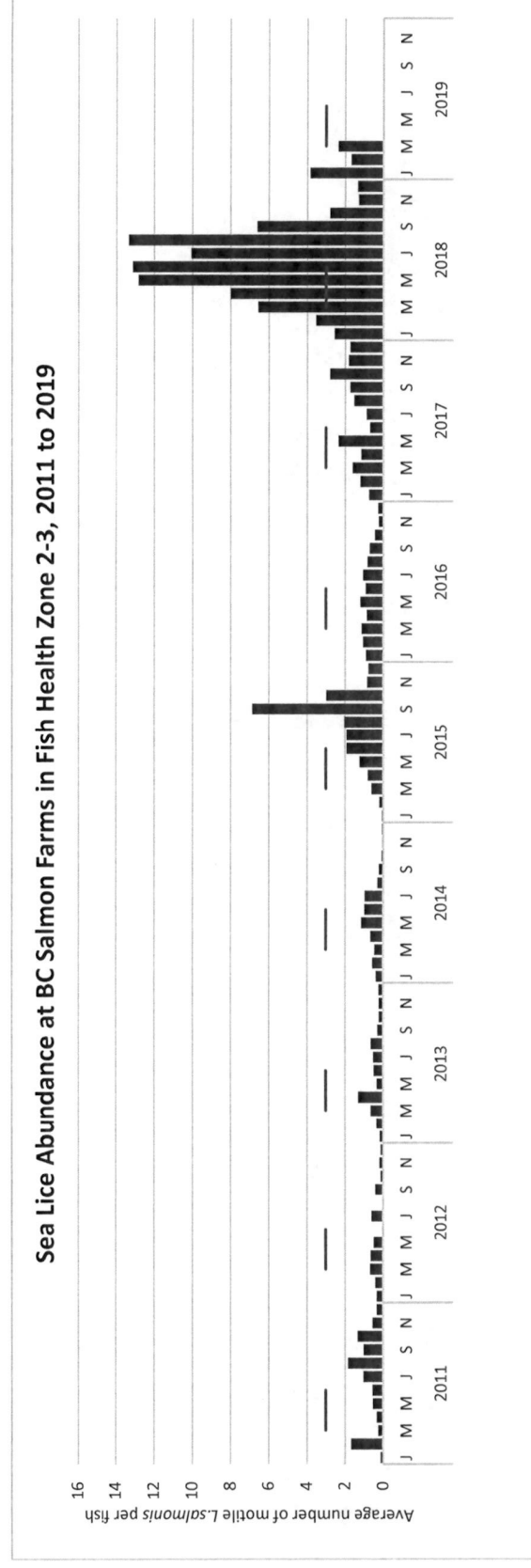
# The Problem of Sea Lice Resistance in BC

- North Pacific basin only area of world without widespread SLICE resistance
- Resistance emerged in Atlantic Region? in mid-2000's and quickly spread to every salmon farming region
  - Genetic resistance now established in farmed and wild Atlantic salmon populations (no known fitness cost)
- SLICE (emamectin benzoate) resistance now documented in ~~many~~ 4 areas
  - Klemtu- 2013
  - Quatsino- 2014
  - Esperanza- 2016-2017
  - Clayoquot- 2018



# Sea lice levels in Clayoquot Area (2011-2018)

- High abundances of sea lice were observed in the Clayoquot Sound area in 2018
- There was SLICE resistance at several facilities that were resolved with rapid harvest and initiation of hydrogen peroxide treatments.

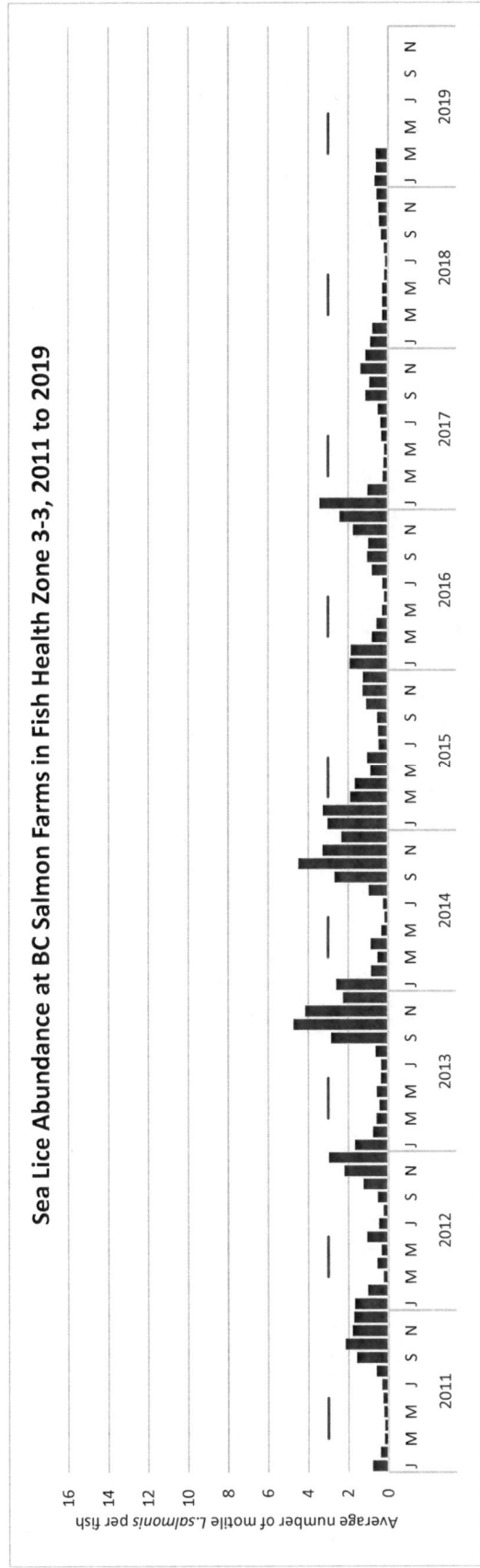


# Current Sea lice levels in Clayoquot Area

- This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1)
- In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction
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# Sea Lice Levels in the Broughton (2011 – present)

- In the Broughton Archipelago, data show that all farms were within the threshold during the 2019 outmigration period
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- Sea lice resistance has never been observed to date in the Broughton area.



# Future Directions on Sea Lice Management

- As challenges have emerged in several areas of the coast with sea lice management, DFO is considering a range of new approaches to manage including:
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
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## Future Directions cont'd

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- Expanded use of Integrated Pest Management
- Continued research and use of findings as part of adaptive management such
- Improved public communication through more interactive online tools such as Barents Watch



**Patirana, Anoma**

---

**From:** Jones, Simon  
**Sent:** May-15-19 3:46 PM  
**To:** Higgins, Mark; Webb, Allison  
**Cc:** Patirana, Anoma; MacDougall, Lesley  
**Subject:** RE: Deck for Science Input on Sea Lice  
**Attachments:** AMD slides for MINO sea lice deckJONES.pptx

I have input information as requested. Please confirm ASAP whether this is sufficient, clear, etc...

Simon

---

**From:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 3:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Subject:** RE: Deck for Science Input on Sea Lice

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---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-15-19 2:58 PM  
**To:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Subject:** Deck for Science Input on Sea Lice

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Please cc Anoma as I may be out of the office and we need to send this up asap.

Thanks,  
Allison

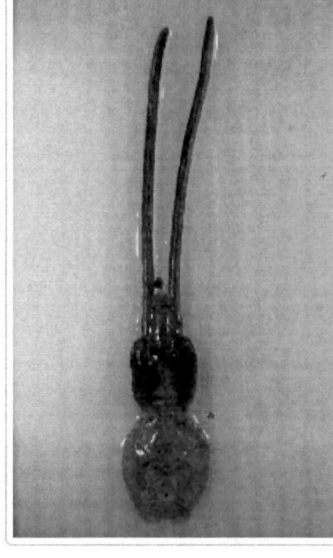
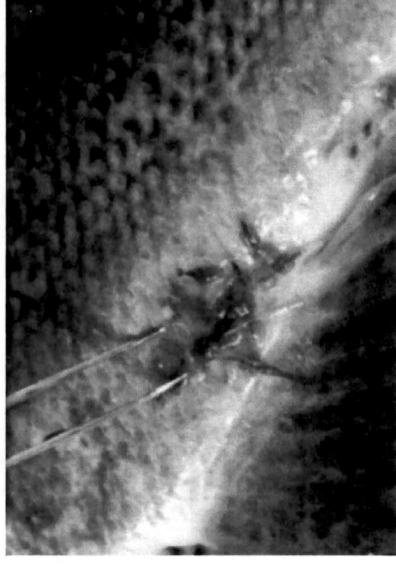
Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

# **Presentation on DFO Sea Lice Science and Management in BC**

May 15, 2019

# Sea Lice in British Columbia

- Two main species of sea lice occur on Atlantic salmon in BC – *Lepeophtheirus salmonis* (the “salmon louse”) and to a lesser extent *Caligus clemensi* (the “herring louse”)
- Both species are naturally occurring parasites that attach to skin, fins and gills of fish and feed on the mucus and skin
- The distribution of both louse species varies seasonally, annually and regionally on both farmed and wild salmon
- The intensity of sea lice varies by species, season and years and is influenced by factors such as water temperature and salinity
- Unlike other salmon aquaculture regions, farmed salmon in BC share sea lice with a large population of wild salmon



Sea louse

Photo: S. Robinson (DFO)

# Science Research and Findings to date - 1

- Since 2004, DFO Science in the Pacific Region has conducted research on sea lice with emphasis on the following areas:
  - Spatial and temporal variations of *Lepeophtheirus* and *Caligus* infections on juvenile wild salmon in various coastal zones (e.g. Broughton Archipelago, Strait of Georgia);
  - Assessments of susceptibility to salmon lice among species of Pacific and Atlantic salmon;
  - Comparisons of natural defense mechanisms to sea lice found among salmon host species;
  - Modelling the dispersal of salmon lice and investigating the epidemiology of salmon lice on non-salmonid hosts.

## Science Research and Findings to date - 2

- Some findings from DFO Science on sea lice:
  - Salmon lice in the Pacific Ocean are genetically distinct from those in the Atlantic Ocean. They are now considered sub-species;
  - Unique to coastal BC, the 3-spine stickleback is an important host of the salmon louse;
  - Spatial and temporal variations in the abundance of sea lice (*Lepeophtheirus* and *Caligus*) on juvenile salmon and sticklebacks result from local salinity conditions;
  - Juvenile pink and coho salmon possess a natural immunity to salmon lice;
  - Natural immunity to salmon lice reflects defense mechanisms in the skin and other body organs of juvenile salmon

# Sea Lice Management in British Columbia

- The operational objectives of DFO's Sea Lice Program are to:
  - Effectively manage sea lice in the farmed salmon population;
  - Protect wild juvenile salmon during their outmigration and;
  - Improve public confidence that sea lice are being appropriately managed on farmed salmon in BC
- DFO issues licences for marine finfish aquaculture that requires monitoring and intervention, if sea lice thresholds are exceeded
- A sea lice threshold of an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish is set for Atlantic salmon to protect outmigrating smolts and has been reviewed by Science
- Requirements are different for facilities cultivating Pacific salmon
- DFO publicly reports all sea lice data on a monthly basis

# Sea Lice Monitoring – Industry Requirements

- Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – Jun 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
  - **If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance**

# Sea Lice Monitoring – DFO Audit Program

- DFO conducts sea lice audits at Atlantic facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic sites
- Additionally some limited sea lice sampling on wild fish is being conducted
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit include and assessment of industry's counting sensitivity, sampling procedures and an audit records.
- To date, there is good agreement between industry reported information and DFO audit data.



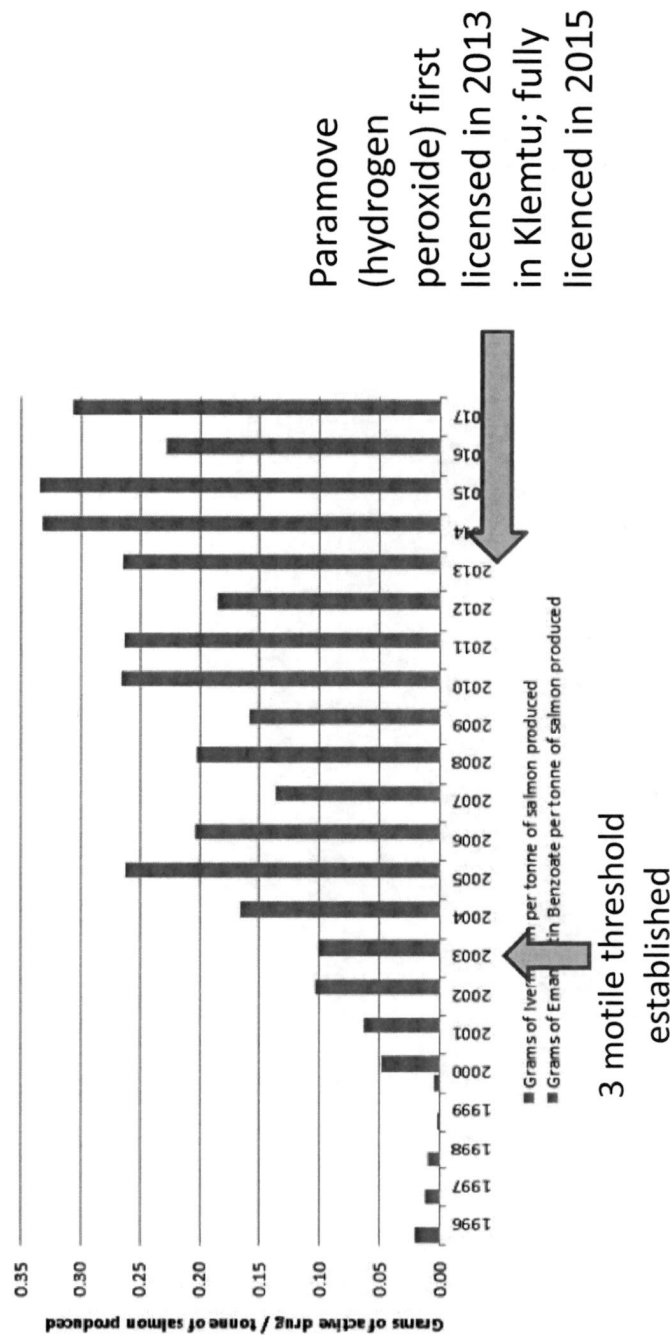
# Sea Lice Resistance

- Resistance is defined as a decreased susceptibility of an organism to a given drug/chemical
- Sea lice have been known to develop resistance to all treatment types: SLICE, organophosphates, pyrethroids, peroxide and even fresh water
- Risk factors:
  - Less than optimal application of treatment such as insufficient dose, insufficient treatment duration
  - Increased frequency of exposure
- Prevention:
  - Appropriate treatment dose, course and consideration of subsequent lice exposure
  - *Refugia*: maintain susceptible population by avoiding exposure to drug
  - Rotational/combined use of parasiticides with different modes of action (i.e. Integrated Pest Management)

# SLICE Use in British Columbia

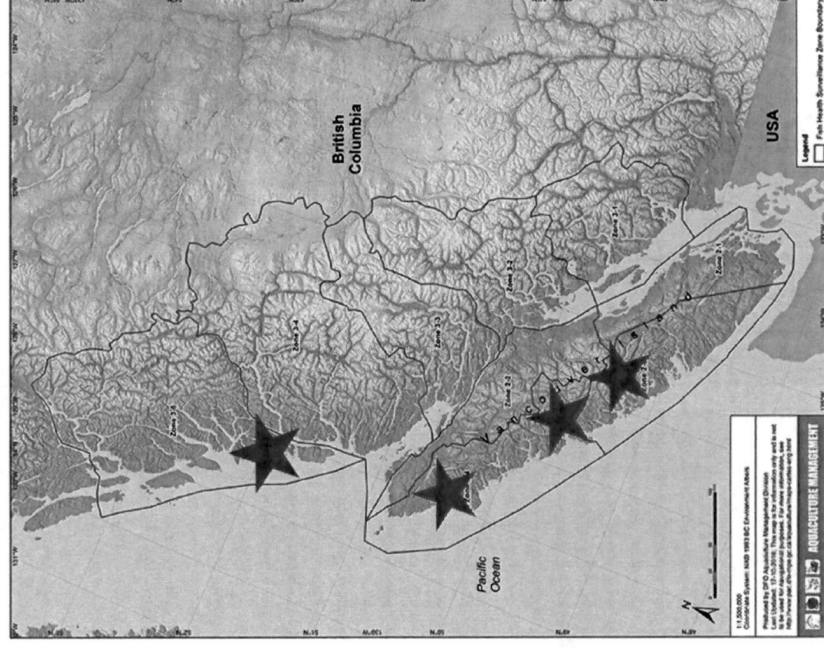
- SLICE (emamectin benzoate) used exclusively as sea lice management tool from 2000-2014

Use of in-feed anti-lice therapeutants in BC salmon aquaculture  
1996 - 2017



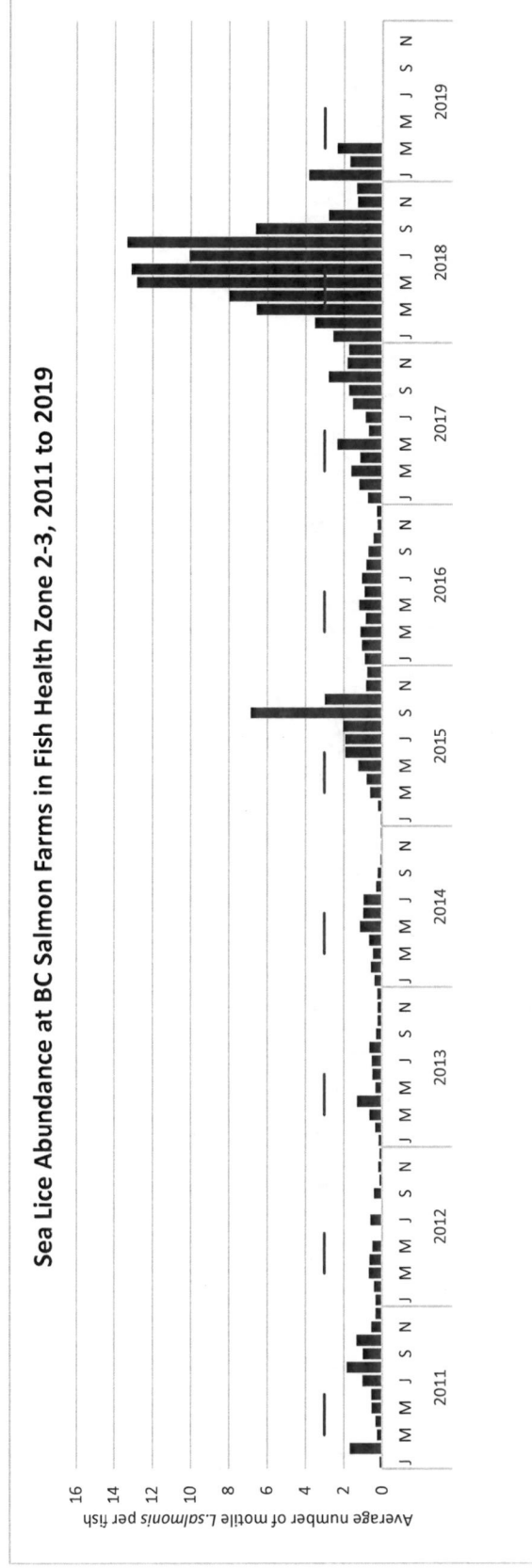
# The Problem of Sea Lice Resistance in BC

- North Pacific basin only area of world without widespread SLICE resistance
- Resistance emerged in Atlantic in mid-2000's and quickly spread to every salmon farming region
  - Genetic resistance now established in farmed and wild Atlantic salmon populations (no known fitness cost)
- SLICE (emamectin benzoate) resistance documented in many areas
  - Klemtu- 2013
  - Quatsino- 2014
  - Esperanza- 2016-2017
  - Clayoquot- 2018



# Sea lice levels in Clayoquot Area (2011-2018)

- High abundances of sea lice were observed in the Clayoquot Sound area in 2018
- There was SLICE resistance at several facilities that were resolved with rapid harvest and initiation of hydrogen peroxide treatments.

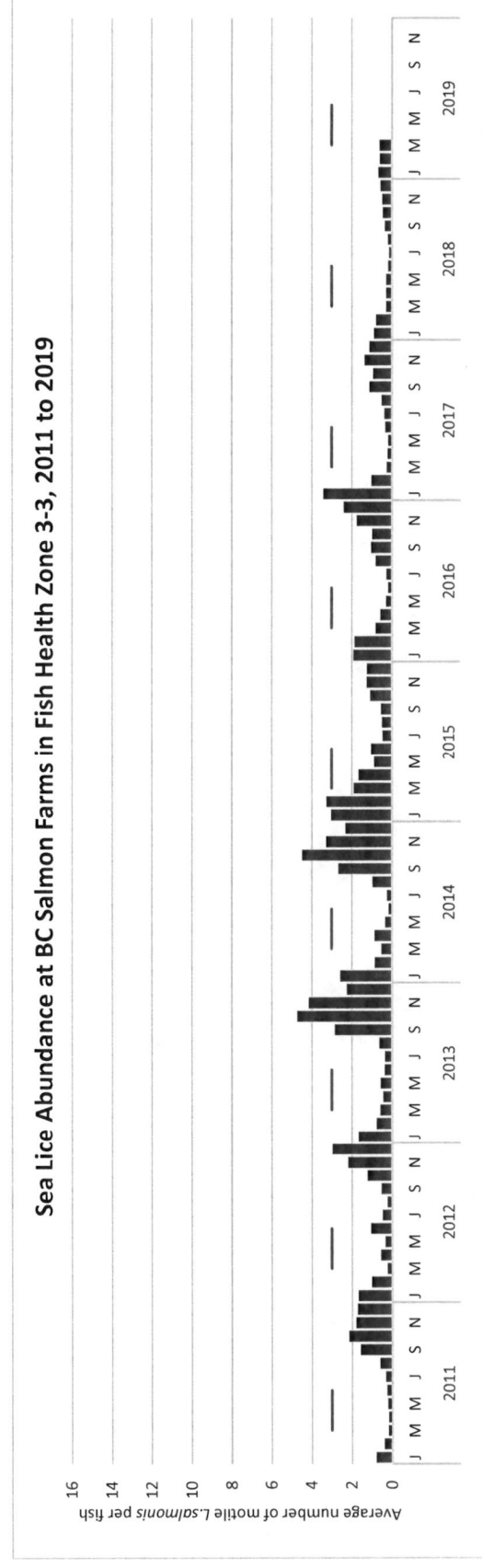


## Current Sea lice levels in Clayoquot Area

- This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1)
- In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction
- Two of the three farms in question have since been harvested out completely and the third will complete harvesting by the end of May
- The remaining Cermaq farms in the Clayquot region have been below threshold levels during the outmigration period
- In 2018, there were exceedances for Cermaq farms in Clayquot Sound and challenges resolving this situation which led to media attention and increased scrutiny
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# Future Directions on Sea Lice Management

- As challenges have emerged in several areas of the coast with sea lice management, DFO is considering a range of new approaches to manage including:
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
  - Consideration of farm and area level cumulative effects
  - Whether different metrics are required
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  - Changing of conditions of license to improve enforceability



## Future Directions cont'd

- Continued implementation of new lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- Expanded use of Integrated Pest Management
- Continued research and use of findings as part of adaptive management such
- Improved public communication through more interactive online tools such as Barents Watch



**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 3:50 PM  
**To:** Shaw, Kerra  
**Cc:** Patirana, Anoma  
**Subject:** Urgent input if possible

Kerra are you able to add any info re our wild fish sea lice sampling? Tx.

- DFO conducts sea lice audits at Atlantic salmon facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic salmon sites
- Additionally some limited sea lice sampling on wild fish is being conducted
- (I think this is important, can this be expanded? I believe Kerra collects wild sea lice data)
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic salmon facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit includes an assessment of industry's counting sensitivity, sampling procedures and an audit records.

- To date, there is good agreement between industry reported information and DFO audit data.

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## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, May 15, 2019 3:50 PM  
**To:** Higgins, Mark; Jones, Simon  
**Cc:** Patirana, Anoma; MacDougall, Lesley  
**Subject:** RE: Deck for Science Input on Sea Lice

Tx. We'll accept those edits and I've followed up with Kerra.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
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**From:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 3:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
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**Sent:** May-15-19 2:58 PM  
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**Cc:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; MacDougall, Lesley <[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)>  
**Subject:** Deck for Science Input on Sea Lice

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Please cc Anoma as I may be out of the office and we need to send this up asap.

Thanks,  
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## Patirana, Anoma

---

**From:** Jones, Simon  
**Sent:** May-15-19 3:55 PM  
**To:** Patirana, Anoma; Higgins, Mark; Webb, Allison  
**Cc:** MacDougall, Lesley  
**Subject:** RE: Deck for Science Input on Sea Lice

Hi Anoma,

When I refer to salmon lice I mean *Lepeophtheirus*, as described on slide 2. Only the leps are considered subspecies.

Cheers,

Simon

**From:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 3:50 PM  
**To:** Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>; Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Subject:** RE: Deck for Science Input on Sea Lice

Thanks Simon. It seems clear to me. However, can you kindly clarify the below bullet. Do you mean that both *L. salmonis* and *C. Caligus* are subspecies of their Atlantic counterparts??

- Salmon lice in the Pacific Ocean are genetically distinct from those in the Atlantic Ocean. They are now considered sub-species;

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**Sent:** May-15-19 3:46 PM  
**To:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
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**To:** Higgins, Mark <[Mark.Higgins@dfo-mpo.gc.ca](mailto:Mark.Higgins@dfo-mpo.gc.ca)>; Jones, Simon <[Simon.Jones@dfo-mpo.gc.ca](mailto:Simon.Jones@dfo-mpo.gc.ca)>

**Cc:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; MacDougall, Lesley <[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)>

**Subject:** Deck for Science Input on Sea Lice

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**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** May-15-19 4:17 PM  
**To:** Jones, Simon; Higgins, Mark; Webb, Allison  
**Cc:** MacDougall, Lesley  
**Subject:** RE: Deck for Science Input on Sea Lice

Thanks Simon! Incorporating your changes to the deck now.

**From:** Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Sent:** May-15-19 4:14 PM  
**To:** Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Subject:** RE: Deck for Science Input on Sea Lice

A few more comments (slides 7, 9, 13 in blue).

Salmon lice and herring lice are defined on slide 2. Most of the deck refers to sea lice, but the species regulated is the salmon louse. It might be useful to align the terminology as much as possible throughout the deck.

Simon

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**Sent:** Wednesday, May 15, 2019 3:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>  
**Cc:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
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No information has been removed or severed from this page

**Patirana, Anoma**

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**From:** Webb, Allison  
**Sent:** May-16-19 7:10 AM  
**To:** Barton, Meagan; Delaney, Paula; Wilkinson, Davida  
**Cc:** Davis, Neil; MacDougall, Lesley; Dickie, Catherine; Khanna, Sukriti; Patirana, Anoma  
**Subject:** FW: Minister Meeting with [REDACTED]  
**Attachments:** MECTS-#4052561-v1-Attachment\_2\_\_Dr\_Moore\_BIOGRAPHY.DOCX; MECTS-#4052560-v1-Attachment\_1\_\_AMD\_slides\_for\_MINO\_sea\_lice\_deck\_v2.PPTX; MECTS-#4052557-v1-Scenario-Note-Min\_Meeting\_[REDACTED]\_PRV\_policy\_May\_2019\_LM ND AWedits\_.DOCX

**Importance:** High

Thanks to everyone for this very quick turnaround. Here is the version that includes Neil and Lesley's edits. It should be ready to go to Rebecca once you have their approvals. Please put this revised SN in the system to replace the earlier version and route for approval.

Thanks again,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 4:50 PM  
**To:** Davis, Neil <Neil.Davis@dfo-mpo.gc.ca>; MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Cc:** Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Dickie, Catherine <Catherine.Dickie@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** Minister Meeting with [REDACTED]  
**Importance:** High

Good Afternoon Neil and Lesley:

Please find the SN for the Minister Meeting with [REDACTED] attached above for your review and approval.

NOTE: This is an URGENT request as it is required to be in the RDG office for 8:00 am Thursday May 16, 2019.

Thank you, Paula

Paula Delaney, Executive Assistant / Assistant exécutif  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
Phone : 604-666-3152  
[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)

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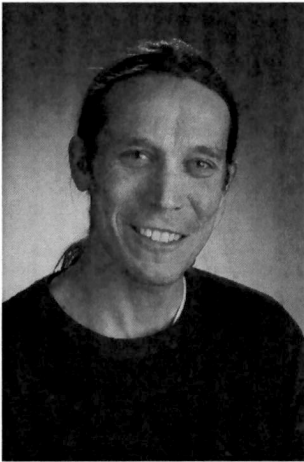
## **BIOGRAPHY**

### **Dr. Jonathan Moore**

Associate Professor, Aquatic Ecology & Conservation

Department of Biological Sciences

Simon Fraser University



The focus of Dr. Moore's research is ecology and conservation of aquatic systems. His general interests include biodiversity, watersheds, species interactions, biogeochemistry, subsidies, ecosystem engineers, disturbance, and global change. Dr. Moore's research is focused on Pacific salmon, with a specialization in research that has conservation and management implications, using a combination of field experiments, field observations, and modeling.

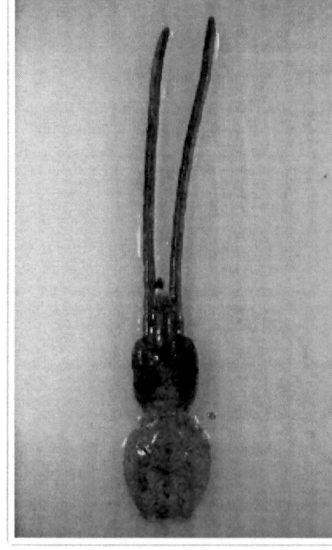
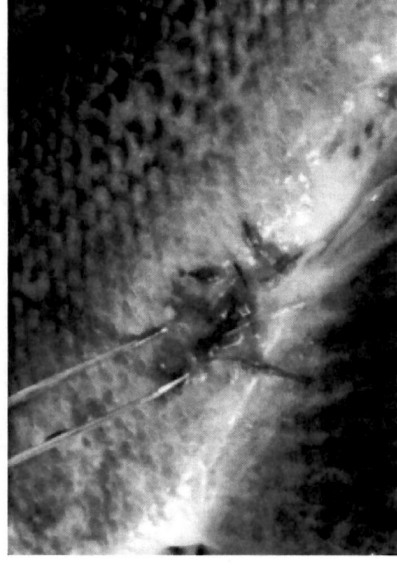
Dr. Moore holds the Liber Ero Chair of Coastal Science and Management.

# **Presentation on DFO Sea Lice Science and Management in BC**

May 15, 2019

# Sea Lice in British Columbia

- Two main species of sea lice occur on Atlantic salmon in BC – *Lepeophtheirus salmonis* (the “salmon louse”) and to a lesser extent *Caligus clemensi* (the “herring louse”)
- Both species are naturally occurring parasites that attach to skin, fins and gills of fish and feed on the mucus and skin
- The distribution of both louse species varies seasonally, annually and regionally on both farmed and wild salmon
- The intensity of sea lice varies by species, season and years and is influenced by factors such as water temperature and salinity
- Unlike other salmon aquaculture regions, farmed salmon in BC share sea lice with a large population of wild salmon



Sea louse

Photo: S. Robinson (DFO)

# Science Research and Findings to date

- Since 2004, DFO Science in the Pacific Region has conducted research on sea lice with emphasis on the following areas:
  - Spatial and temporal variations of *Lepeophtheirus* and *Caligus* infections on juvenile wild salmon in various coastal zones (e.g. Broughton Archipelago, Strait of Georgia);
  - Assessments of susceptibility to salmon lice among species of Pacific and Atlantic salmon;
  - Comparisons of natural defense mechanisms to sea lice found among salmon host species;
  - Modelling the dispersal of salmon lice and investigating the epidemiology of salmon lice on non-salmonid hosts.

# Science Research and Findings to date cont'd

- Some findings from DFO Science on sea lice:
  - Salmon lice in the Pacific Ocean are genetically distinct from those in the Atlantic Ocean. They are now considered sub-species;
  - Unique to coastal BC, the 3-spine stickleback is an important host of the salmon louse;
  - Spatial and temporal variations in the abundance of sea lice (*Lepeophtheirus* and *Caligus*) on juvenile salmon and sticklebacks result from local salinity conditions;
  - Juvenile pink and coho salmon possess a natural immunity to salmon lice;
  - Natural immunity to salmon lice reflects defense mechanisms in the skin and other body organs of juvenile salmon.

# Sea Lice Management in British Columbia

- The operational objectives of DFO's Sea Lice Program are to:
  - Effectively manage sea lice in the farmed salmon population;
  - Protect wild juvenile salmon during their outmigration and;
  - Improve public confidence that sea lice are being appropriately managed on farmed salmon in BC
- DFO issues licences for marine finfish aquaculture that requires monitoring and intervention, if sea lice thresholds are exceeded
- A sea lice threshold of an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish is set for Atlantic salmon farms to protect outmigrating smolts and has been reviewed by Science
- Requirements are different for facilities cultivating Pacific salmon
- DFO publicly reports all sea lice data on a monthly basis

# Sea Lice Monitoring – Industry Requirements

- Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – June 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
  - **If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance**

# Sea Lice Monitoring – DFO Audit Program

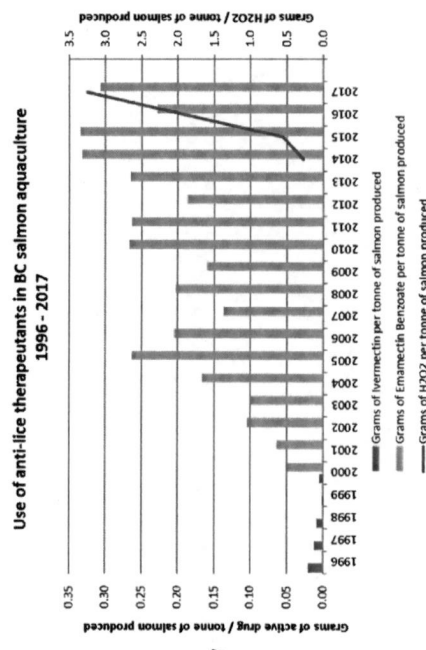
- DFO conducts sea lice audits at Atlantic salmon facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic salmon sites
- Additionally some limited sea lice sampling on wild fish is being conducted
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic salmon facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit includes an assessment of industry's counting sensitivity, sampling procedures and audit records.
- To date, there is good agreement between industry reported information and DFO audit data.





# Public Reporting of Sea Lice data

- DFO publically reports on the aquaculture sector's environmental and operational performance
- More than 20 public reports are published on issues including fish health, sea lice and environmental performance via Open Data and DFO's regional website
- Public reports of relevance to sea lice include:
  - Sea Lice Audit - Quarterly
  - Farm Level Industry Sea Lice Report – Monthly
  - Sea Lice Exceedance Graph – Monthly/ Quarterly
  - Antimicrobial and Slice Use Graph – Annual



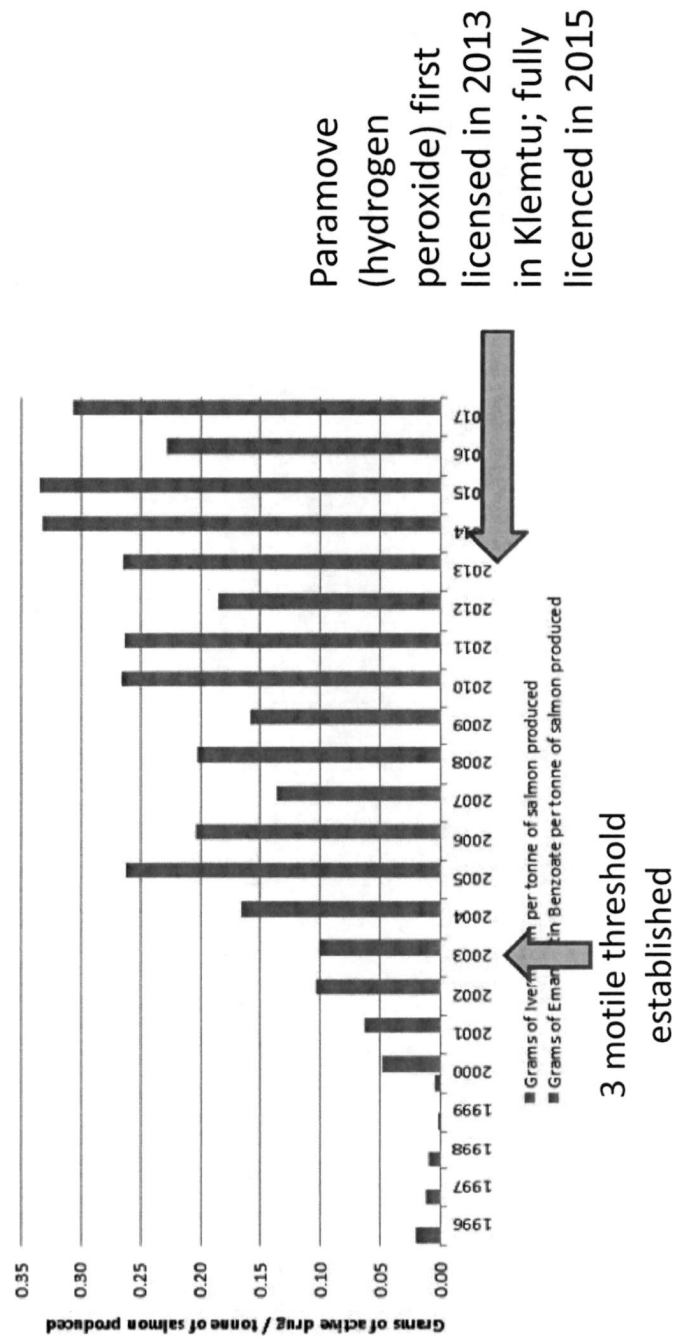
# Sea Lice Resistance

- Resistance is defined as a decreased susceptibility of an organism to a given drug/chemical
- Salmon lice have been known to develop resistance to all treatment types: SLICE, organophosphates, pyrethroids, peroxide and even fresh water
- Risk factors:
  - Less than optimal application of treatment such as insufficient dose, insufficient treatment duration
  - Increased frequency of exposure
- Prevention:
  - Appropriate treatment dose, course and consideration of subsequent lice exposure
  - *Refugia*: maintain susceptible population by avoiding exposure to drug
  - Rotational/combined use of parasiticides with different modes of action (i.e. Integrated Pest Management)

# SLICE Use in British Columbia

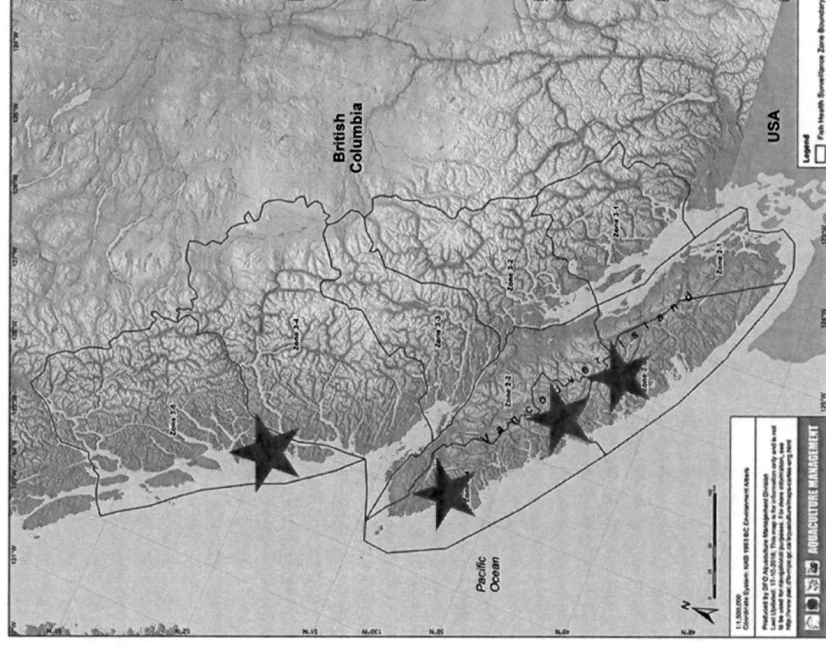
- SLICE (emamectin benzoate) used exclusively as sea lice management tool from 2000-2014

Use of in-feed anti-lice therapeutants in BC salmon aquaculture  
1996 - 2017



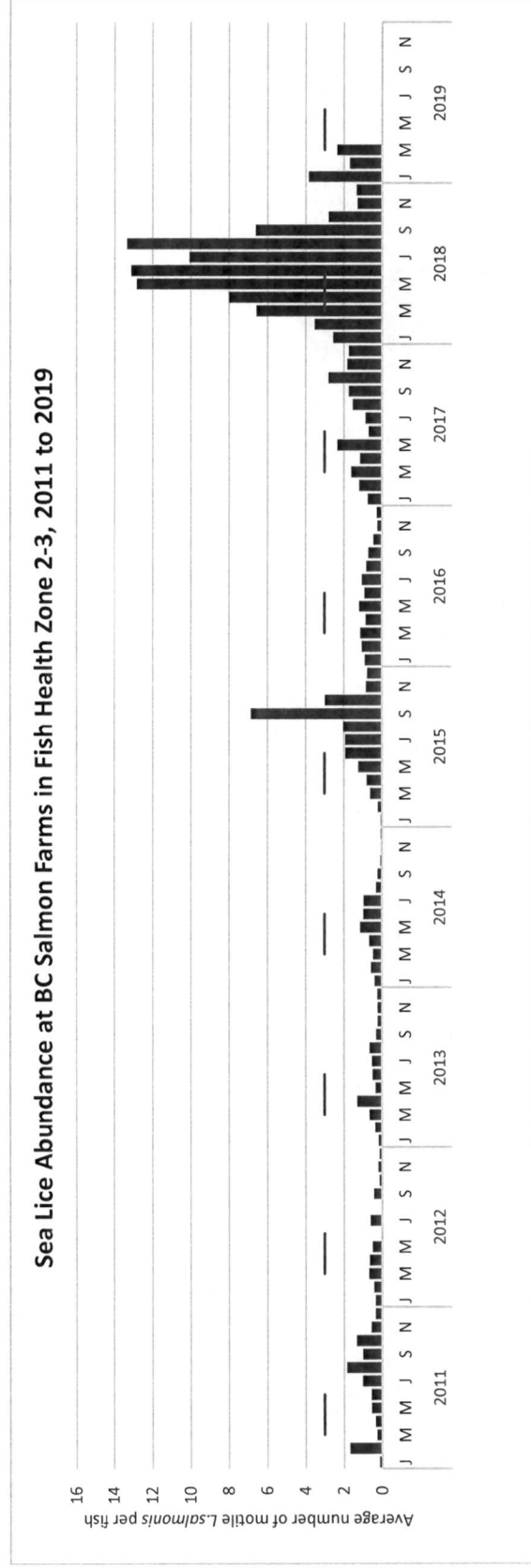
# The Problem of Sea Lice Resistance in BC

- North Pacific basin only area of world without widespread SLICE resistance
- Resistance emerged in Atlantic Region in mid-2000's and quickly spread to every salmon farming region
  - Genetic evidence of resistance in salmon lice from farmed and wild Atlantic salmon populations (no known fitness cost)
- SLICE (emamectin benzoate) resistance now documented in 4 areas
  - Klemtu- 2013
  - Quatsino- 2014
  - Esperanza- 2016-2017
  - Clayoquot- 2018



# Sea lice levels in Clayoquot Area (2011-2018)

- High abundances of sea lice were observed in the Clayoquot Sound area in 2018
- There was SLICE resistance at several facilities that were resolved with rapid harvest and initiation of hydrogen peroxide treatments.

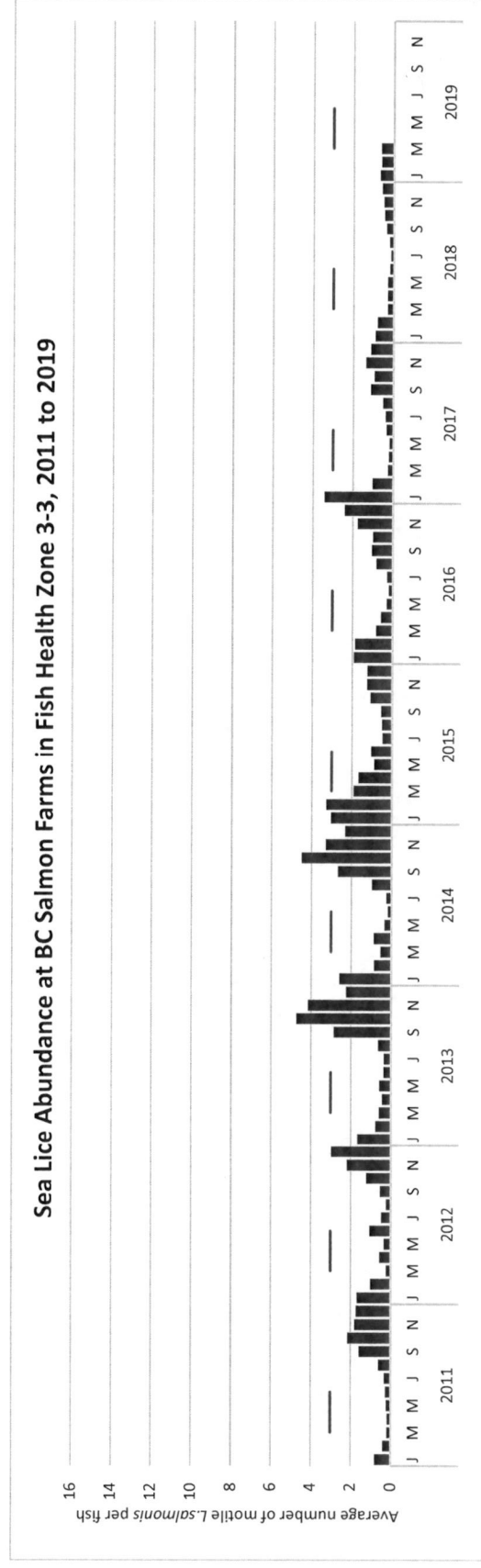


## Current Sea lice levels in Clayoquot Area

- This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1)
- In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction
- Two of the three farms in question have since been harvested out completely and the third will complete harvesting by the end of May
- The remaining Cermaq farms in the Clayquot region have been below threshold levels during the outmigration period
- In 2018, there were exceedances for Cermaq farms in Clayquot Sound and challenges resolving this situation which led to media attention and increased scrutiny
- Efforts by DFO staff to work with C&P to lay charges were unsuccessful

# Sea Lice Levels in the Broughton (2011 – present)

- In the Broughton Archipelago, data show that all farms were within the threshold during the 2019 outmigration period
- DFO audited 9 farms in the Broughton in April and another two in May which were all below threshold.
- Sea lice resistance has never been observed to date in the Broughton area.



# Future Directions on Sea Lice Management

- As challenges have emerged in several areas of the coast with sea lice management, DFO is considering a range of new approaches to manage including:
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
  - Consideration of farm and area level cumulative effects
  - Whether different metrics are required
  - Use of modelling to develop area-based management for lice
  - Changing of conditions of license to improve enforceability





## Future Directions cont'd

- Continued implementation of new lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- Expanded use of Integrated Pest Management
- Continued research and use of findings as part of adaptive management
- Improved public communication through more interactive online tools such as Barents Watch

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 7:14 AM  
**To:** Paylor, Adrienne; Shaw, Kerra; Jones, Simon; Higgins, Mark; MacDougall, Lesley  
**Subject:** FW: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

I think that Science has been collecting info on juveniles and we have done so as well. I need some help with putting together a couple of media lines here.

Kerra can you please help and write one or two media lines for AMD and Simon/Mark/Lesley could you write one or two from Science perspective? Is Chrys Neville doing some of this?

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 6:40 PM  
**To:** Davis, Neil <Neil.Davis@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** Fwd: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Hi, sorry to bother.

Can you please advise on additional questions from CTV below?  
Thanks.

Louise

s.19(1)

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** [REDACTED]  
**Date:** 2019-05-15 18:17 (GMT-08:00)  
**To:** "Girouard, Louise" <Louise.Girouard@dfo-mpo.gc.ca>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Thank you for this.

So to confirm - Q1 - from your answer it appears that no one is currently checking on juvenile lice counts at this time nor is it a regular part of your monitoring? If you are hearing reports of infection in young wild fish why don't you deploy your own team to check it out? Is DFO concerned to hear juveniles have high lice counts when these young fish shouldn't be so riddled with the parasite ?

You state that DFO is moving to an area-based management structure for aquaculture ... what is the time line? In 6 months ? What moving to mean in terms of real and actual change ?

As for story, we are going into editing tomorrow.

On May 15, 2019, at 5:50 PM, Girouard, Louise <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)> wrote:

Melanie,

Apologies for the delay in responding – please see below answers to your questions. Can you please give us an indication as to when the story might air?

#### **Background on sea lice and management**

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.

#### **Q1. Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**

- Our audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. While DFO does some wild salmon sea lice monitoring to provide data for our management of sea lice at salmon farms; our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

s.19(1)

- DFO requires sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimizes potential impacts to wild salmon, particularly during the important juvenile outmigration period.
- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.

**Q2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**

- DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels.

**Q3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**

- DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
- Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.

**Q4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**

- DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish.

Cheers,

Louise

**Louise Girouard**

*Regional Director Communications | Directrice régionale des communications*

Pacific Region | Région du Pacifique

Fisheries, Oceans and Canadian Coast Guard | Pêches, Océans et Garde côtière canadienne

[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca) Tel: 604.666.3855 | Cell: [REDACTED]

**From:** [REDACTED]

**Sent:** Tuesday, May 14, 2019 11:28 AM

**To:** NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>

**Cc:** DFO.F PAC RHQ Media / Médias QGR PAC F.MPO <[DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca](mailto:DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca)>

**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Hi

Thank you for this.

I need the info by 1300 pst tomorrow.

That will be approx 48 hours since my request went in. I am hoping that is sufficient time for at least some sort of statement or answer to some of the questions. I really appreciate it

[REDACTED]

[REDACTED]

On May 14, 2019, at 11:00 AM, NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)> wrote:

Hello [REDACTED]

We continue to work on obtaining this information for you, but will not be able to meet your deadline. When is the absolute latest you could receive this information in order to complete your story?

Thank you,

**Barre G. Campbell**

Senior Advisor, Media Relations

Conseiller principal, Relations avec les médias

Fisheries, Oceans and the Canadian Coast Guard | Pêches, océans et la Garde côtière canadienne

[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)

Media Line | Ligne média : 613-990-7537

Follow us on Twitter @FishOceansCAN and @CoastGuardCAN | Suivez-nous sur

Twitter @PechesOceansCAN et @GardeCotiereCAN

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s.19(1)

**From:** [REDACTED]

**Sent:** May-13-19 4:03 PM

**To:** NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>; DFO.F PAC RHQ Media / Médias QGR PAC F.MPO <[DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-](mailto:DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-)

[mpo.gc.ca](http://mpo.gc.ca)>

**Subject:** CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Greetings

I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island.

In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound . It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq).

1. Can you tell me what your teams are finding in terms of sea lice infection rate in these areas? Do you have teams out there monitoring and tracking the outbreak?
2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?
3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?
4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddington and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?

Hoping to get some answers to my questions by 4pmEST Tuesday May 14<sup>th</sup>.

Thank you in advance

 / CTV National

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**External Email:** Please use caution when opening links and attachments / **Courriel externe:** Soyez prudent avec les liens et documents joints

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**External Email:** Please use caution when opening links and attachments / **Courriel externe:** Soyez prudent avec les liens et documents joints

<Sea lice infographic\_EN.pdf>

s.19(1)

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 9:07 AM  
**To:** Patirana, Anoma  
**Subject:** RE: ROCS para on sea lice

No that's ok. Thanks so much! Just a few steps ahead of me ; )

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Sent:** Thursday, May 16, 2019 8:41 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** RE: ROCS para on sea lice

Hey Allison, we did a ROCs submission a couple of weeks ago (see below). Do you still want me to do another one? We also flagged it in the ROCs DIAMONDS report..

**Raises Concerns of Sea Lice Presence in Wild Fish through Social Media**

[REDACTED] has recently been raising concern on social media about high levels of sea lice present on wild fish in the Broughton Archipelago. She is urging people to contact the Minister directly to demand he 'order removal of all lice infected fish'. Following the requirements in Conditions of Licence, and consistent with the Fish Health Audit and Intelligence Program, regular reporting on farm lice levels are required and audits are being conducted by DFO staff. None of the sites audited by DFO had motile sea lice (*L. salmonis*) levels above the reporting threshold of 3 motile lice per fish. Overall in comparing the lice numbers reported to DFO to those recorded on site there is good agreement. At this time facilities in the Broughton have initiated preventative treatment and are in compliance with respect to their sea lice management conditions of licence. Should lice levels not remain under threshold, facilities are required to report any issues and would be required to initiate a secondary plan to reduce lice levels. DFO continues to monitor the situation but at present there are no concerns that warrant further action.

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-16-19 8:31 AM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Cc:** Chin, Jena <Jena.Chin@dfo-mpo.gc.ca>  
**Subject:** ROCS para on sea lice

Anoma – could you please get a para to Jena Chin asap this am for the ROCS summary since this issue is starting to get significant media attention and will garner more interest no doubt?

Thanks so much,  
Allison

s.19(1)

Allison Webb, Director / Directrice

**Aquaculture Management / Gestion de l'aquaculture**  
**Fisheries Management Branch / Direction de la gestion des pêches**  
**Fisheries and Oceans Canada / Pêches et Océans Canada**  
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**604-666-7009**  
**Allison.webb@dfo-mpo.gc.ca**

No information has been removed or severed from this page



## **Webb, Allison**

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**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 9:07 AM  
**To:** Chin, Jena; Patirana, Anoma  
**Subject:** ROCS

Hi Jena – Since we already did one previously on sea lice, we won't provide another one.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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No information has been removed or severed from this page

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 9:16 AM  
**To:** MacDougall, Lesley; Paylor, Adrienne; Jones, Simon; Parsons, Jay  
**Subject:** RE: sea lice 101?

I've not seen anything like that unfortunately. Perhaps someone else is more familiar as there could be a historic one available.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
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**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Thursday, May 16, 2019 9:14 AM  
**To:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** sea lice 101?

Hi all;

In addition to the deck and SN that you pulled together yesterday (and thank you!), I'm wondering if there is, somewhere, a pre-made "sea lice 101" kind of presentation. Wayne was asking for one yesterday, made it sound like it was a 're-send' of something he'd seen previously: background general information. Does this sound familiar to anyone?

Lesley MacDougall  
A/Division Manager, Aquatic Diagnostics, Genomics & Technology / Division des diagnostics, la génomique, de la technologie aquatique  
Fisheries and Oceans Canada / Pêches et Océans Canada  
Pacific Biological Station / Station Biologique du Pacifique  
Nanaimo, B.C. V9T 6N7  
250-756-7395  
[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 9:21 AM  
**To:** Paylor, Adrienne; McConnachie, Sarah  
**Cc:** McCorquodale, Brenda  
**Subject:** FW: Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]  
  
**Importance:** High

Hi Adrienne – You and/or one of your team may need to support Lesley on this in Zac's absence, FYI. You may want to put this in your calendar.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 12:55 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Fw: Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]  
**Importance:** High

Hi again - I'm assuming you've got this or something like it as well. Since Zac [REDACTED] is there someone else that can participate in his stead?

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 15, 2019 11:03  
**To:** MacDougall, Lesley  
**Cc:** McLeod, Patricia; Dickie, Catherine  
**Subject:** Please read: Week of May 21st - Ministerial Briefing on Sea Lice and meeting with [REDACTED]

Hi Lesley, I participated in the weekly PAC/MINO call with Minister's staff and the following issues were brought to our attention:

1. Ministerial Briefing on PRV and Sea Lice is scheduled for Tuesday May 21<sup>st</sup> @ 9:00 a.m.
2. Minister's is meeting with [REDACTED] on Wednesday May 22<sup>nd</sup> in the afternoon, time TBC.  
Meeting will take place RHQ in the Executive Boardroom.

s.19(1)

**Ministerial Briefing on May 21<sup>st</sup>:** I understand from Rebecca that you're working on a DECK for the Ministerial Briefing on sea lice. She also asked that you include a Backgrounder on Sea lice and any recent updates on studies related to Sea Lice so that we can educate the Minister on Sea lice, almost a Sea Lice 101. She's also asked that both yourself and Zac Waddington participate in the Ministerial Briefing so that you two can educate the Minister on Sea lice. Please advise if you're comfortable participating in the briefing and I will seek approval from NHQ for the both of you.

Your participation will be via conference call, unless you're in Vancouver and then you can join RDG in her office.

**May 22<sup>nd</sup> meeting with [REDACTED]** Rebecca has asked that you accompany her to this meeting. Please confirm your availability (and comfort level with this).

Lastly, your office should be receiving a request to prepare a Scenario Note and background information for the meeting of May 22<sup>nd</sup>. This request is coming from our office to Science and FM (I will send you a copy of the incoming request for your info). There will be a pre-brief, scheduled in advance of the May 22<sup>nd</sup> meeting, and Rebecca has asked you, Zac Waddington and Allison Webb participate in this pre-brief. This meeting request will come to you from "PAC RDGExecScheduler", which is the generic email address for Rebecca's Scheduling Assistant.

Any questions or concerns please do not hesitate to contact me.

Thank you

Sharan Johal  
A/Team Lead, Executive Secretariat  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada - Pacific Region/ Pêches et Océans Canada - Région du Pacifique  
200-401 Burrard Street / 401, rue Burrard, bureau 200  
Vancouver, BC/CB V6C 3S4  
Tel: 604-666-7102 / Fax : 604-666-8956  
[sharan.johal@dfo-mpo.gc.ca](mailto:sharan.johal@dfo-mpo.gc.ca)

s.19(1)

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 10:26 AM  
**To:** Rainer, Michelle  
**Subject:** RE: Sea lice inquiry

Yes please call Science. I am on an ADM call for Rebecca and can't be sprung free at this point.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Thursday, May 16, 2019 10:25 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea lice inquiry

Hi Allison,

The Minister's office is keen to supply a response to [REDACTED] follow-up questions. Do you think we will be able to send up a response before lunch today? Also wondering if sea lice/wild smolt monitoring is more of a science responsibility and if I should be engaging them? Please give me a call if you can to discuss.

Thanks,  
Michelle

s.19(1)

**Webb, Allison**

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**From:** Webb, Allison  
**Sent:** Thursday, May 16, 2019 3:49 PM  
**To:** Girouard, Louise; Davis, Neil; Rainer, Michelle  
**Subject:** Re: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Can you please delete the reference to communities as we're really onky.working with FNs. Thx. Otherwise ok.

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Girouard, Louise  
**Sent:** Thursday, May 16, 2019 2:09 PM  
**To:** Davis, Neil; Webb, Allison; Rainer, Michelle  
**Subject:** Fwd: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Can we proceed with this response?


L

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** "Rainer, Michelle" <Michelle.Rainer@dfo-mpo.gc.ca>  
**Date:** 2019-05-16 13:25 (GMT-08:00)  
**To:** "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** "Girouard, Louise" <Louise.Girouard@dfo-mpo.gc.ca>, "Davis, Neil" <Neil.Davis@dfo-mpo.gc.ca>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Thanks, Allison. I have heard back from Science. Please see proposed response below for your approval. I just took some info from a DFO backgrounder on area-based management.

**Issue:**  CTV News has follow-up questions on sea lice in BC:

Q1: From your answer it appears that no one is currently checking on juvenile lice counts at this time nor is it a regular part of your monitoring? If you are hearing reports of infection in young wild fish why don't you deploy your own team to check it out? Is DFO concerned to hear juveniles have high lice counts when these young fish shouldn't be so riddled with the parasite ?

Q2: You state that DFO is moving to an area-based management structure for aquaculture ... what is the time line? In 6 months ? What moving to mean in terms of real and actual change?

**Deadline:** May 16, 3 p.m. PST

**Approved by:** s.19(1)

A1:

DFO science in the Pacific region has conducted research on sea lice since 2004, with emphasis on spatial and temporal variations of sea lice infections on juvenile wild salmon in various coastal zones. An example of this research can be found at

[www.researchgate.net/publication/274382917\\_Spatial\\_patterns\\_of\\_sea\\_lice\\_infection\\_among\\_wild\\_and\\_captive\\_salmon\\_in\\_western\\_Canada](http://www.researchgate.net/publication/274382917_Spatial_patterns_of_sea_lice_infection_among_wild_and_captive_salmon_in_western_Canada). DFO has not currently received data that indicates there are high levels of sea lice on juvenile salmon along the BC coast.

The aquaculture management division in Pacific Region also conducts some sea lice assessments of juvenile salmon in support of its regulatory and monitoring work and is currently conducting juvenile assessments in Esperanza Inlet near active fish farms; results of this work are not yet ready.

A2:

DFO is committed to moving to an area-based management structure for aquaculture in BC; further information can be found in this backgrounder at: [www.canada.ca/en/fisheries-oceans/news/2018/12/the-government-of-canada-is-demonstrating-leadership-on-aquaculture-management-to-ensure-fish-farming-in-canada-is-done-in-the-most-sustainable-and.html](http://www.canada.ca/en/fisheries-oceans/news/2018/12/the-government-of-canada-is-demonstrating-leadership-on-aquaculture-management-to-ensure-fish-farming-in-canada-is-done-in-the-most-sustainable-and.html)

The Government of Canada is targeting northern Vancouver Island as the general location to pilot this approach. Discussions are underway with the Province of British Columbia, Indigenous peoples and communities; there is no set timeline for implementation.

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>

**Sent:** Thursday, May 16, 2019 1:09 PM

**To:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Davis, Neil <Neil.Davis@dfo-mpo.gc.ca>; Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>

**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Michelle did you get anything from Science? Science would be best placed to comment on juvenile salmon. We aim to limit the potential impact of farmed salmon on wild salmon through our threshold which is designed to protect juveniles and also auditing these levels to ensure compliance with our threshold.

In terms of Area Based Management, we are currently discussing this with First Nations to engage their level of interest in participating in designing this type of approach. I am not able to put a timeframe on implementation at this time. Potential changes could see, but are not limited to Area specific thresholds for sea lice or more of an bay management approach to consider cumulative effects, area specific considerations, monitoring etc, but will be variable depending on the interests of the local First Nations. It is still very early days of development.

We could share our presentation on area based management if necessary with the reporter as it has been shared publicly with FN and industry and ENGOs I believe as well. Just a thought.

I didn't get a response from my team as I think that they are out in the field and unreachable. They had sent me the following yesterday which is not clear and not at all useable for the media. I haven't seen the data that we've collected from Esperanza rolled up yet so am not clear how it is being and will be used.

Sorry I couldn't be more helpful,  
Allison

# In some cases, industry is required to conduct wild juvenile salmonid sea lice monitoring, and in some

cases, it is voluntarily done. There are multi-year data series from the Broughton Archipelago, Clayoquot Sound, and Nootka Sound. DFO-Science collects a lot of sea lice information from juvenile wild salmonids as well, and for the last 3 years, DFO-Aquaculture Management has been conducting juvenile assessments in Esperanza Inlet near active fish farms.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Girouard, Louise <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 16, 2019 12:48 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Davis, Neil <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Allison / Neil - Anything I can share with MINO?

L

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 16, 2019 7:15 AM  
**To:** Girouard, Louise <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)>; Davis, Neil <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

No worries. This is just the tip of the iceberg. We are expecting significant follow up. We'll get back to you asap.



Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Girouard, Louise <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, May 15, 2019 6:40 PM  
**To:** Davis, Neil <[Neil.Davis@dfo-mpo.gc.ca](mailto:Neil.Davis@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** Fwd: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Hi, sorry to bother.

Can you please advise on additional questions from CTV below?  
Thanks.

Louise

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** [REDACTED]  
**Date:** 2019-05-15 18:17 (GMT-08:00)  
**To:** "Girouard, Louise" <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Thank you for this.

So to confirm - Q1 - from your answer it appears that no one is currently checking on juvenile lice counts at this time nor is it a regular part of your monitoring? If you are hearing reports of infection in young wild fish why don't you deploy your own team to check it out? Is DFO concerned to hear juveniles have high lice counts when these young fish shouldn't be so riddled with the parasite ?

You state that DFO is moving to an area-based management structure for aquaculture ... what is the time line? In 6 months ? What moving to mean in terms of real and actual change ?

As for story, we are going into editing tomorrow.

s.19(1)



On May 15, 2019, at 5:50 PM, Girouard, Louise <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)> wrote:

Apologies for the delay in responding – please see below answers to your questions. Can you please give us an indication as to when the story might air?

**Background on sea lice and management**

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.

**Q1. Can you tell me what your teams are finding in terms of sea lice infection rate in wild salmon in these areas? Do you have teams out there monitoring and tracking the outbreak?**

- Our audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. While DFO does some wild salmon sea lice monitoring to provide data for our management of sea lice at salmon farms; our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).
- DFO requires sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimizes potential impacts to wild salmon, particularly during the important juvenile outmigration period.
- Currently, in the Broughton Archipelago, data show that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.

s.19(1)

- For the past few years in Clayoquot Sound, the typical drop in salinity that comes with winter and spring rains has not occurred. This higher salinity has resulted in increased lice production in the region and exacerbated the lice levels on farms.

**Q2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?**

- DFO worked closely with Cermaq Canada to ensure that effective steps were taken to manage the elevated sea lice level at the Bedwell East site. The company has now harvested fish from this site so there are no longer concerns with lice levels.

**Q3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?**

- DFO has developed regulations that are appropriate to marine conditions in BC. Regulations that are suitable for one environment might not be appropriate for another; for example, there are different species of wild salmon and sea lice in Norway than in BC.
- Currently, regulations stipulate a 3-motile salmon louse threshold during the outmigration period for all salmon farms in BC. DFO is moving to an area-based management structure for aquaculture in BC that will allow us to tailor thresholds to ensure they are suitable for specific marine environments along our coast.

**Q4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?**

- DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish.

Cheers,

Louise  
Louise Girouard

*Regional Director Communications | Directrice régionale des communications*  
Pacific Region | Région du Pacifique  
Fisheries, Oceans and Canadian Coast Guard | Pêches, Océans et Garde côtière canadienne  
Louise.Girouard@dfo-mpo.gc.ca Tel: 604.666.3855 | Cell: [REDACTED]

**From:** [REDACTED]  
**Sent:** Tuesday, May 14, 2019 11:28 AM  
**To:** NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>  
**Cc:** DFO.F PAC RHQ Media / Médias QGR PAC F.MPO <[DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca](mailto:DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca)>  
**Subject:** RE: CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

Hi

Thank you for this.  
I need the info by 1300 pst tomorrow.  
That will be approx 48 hours since my request went in. I am hoping that is sufficient time for at least some sort of statement or answer to some of the questions. I really appreciate it

[REDACTED]

[REDACTED]

On May 14, 2019, at 11:00 AM, NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)> wrote:

Hello Melanie,

We continue to work on obtaining this information for you, but will not be able to meet your deadline. When is the absolute latest you could receive this information in order to complete your story?

Thank you,

s.16(2)(c)

s.19(1)

**Barre G. Campbell**  
Senior Advisor, Media Relations  
Conseiller principal, Relations avec les médias  
Fisheries, Oceans and the Canadian Coast Guard | Pêches, océans et la Garde côtière canadienne  
[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)  
Media Line | Ligne média : 613-990-7537  
Follow us on Twitter @FishOceansCAN and @CoastGuardCAN | Suivez-nous sur Twitter @PechesOceansCAN et @GardeCotiereCAN

**From:** [REDACTED]  
**Sent:** May-13-19 4:03 PM  
**To:** NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>; DFO.F PAC RHQ Media / Médias QGR PAC F.MPO <[DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca](mailto:DFO.FPACRHQMedia-MediasQGRPACF.MPO@dfo-mpo.gc.ca)>  
**Subject:** CTV NATIONAL NEWS - REQUEST FOR COMMENT OR WRITTEN STATMENT - SEA LICE OUTBREAKS

## Greetings

I am writing to you regarding sea lice outbreaks on the west and east coast of Vancouver Island.

In talking with different marine conservation groups, it appears there is an estimated 75% sea lice infection rate among young wild salmon in the Clayoquot Sound . It's also estimated there's a 90% infection rate right now in the Broughton. These outbreaks appear to be close to several fish farms (predominantly Cermaq).

1. Can you tell me what your teams are finding in terms of sea lice infection rate in these areas? Do you have teams out there monitoring and tracking the outbreak?
2. What is the current lice infection rate at the Bedwell East fish Farm? It is my understanding that it has been x5 over DFO's sea lice limit. Have any fines been issued to Cermaq for consistent heavy lice loads? What legal mechanism are you using to ensure that farms with heavy lice load comply with your guidelines and regulations?
3. The maximum limit for lice prevalence on farmed fish in Norway is much more strict than what we have here in BC. Why is DFO not reducing the total lice load limit per fish on BC fish farms? Or at least, why not do so during the critical out migration period of juvenile salmon?
4. Also, I have obtained several ATIP documents (ATIP A-2018-00799). The documents appear to suggest that DFO staff have flagged on previous occasions that there are possible problems around conditions of license and enforcement. Various staff appear to call for changes to the system and a strengthening of COLs/enforcement (Ian Keith and Neil Jensen mention this. Zac Waddinton and Claire Doucette also refer to the topic). What is DFO doing to improve and strengthen licence conditions /enforcement to help combat the continual sea lice problem on BC's fish farms?

Hoping to get some answers to my questions by 4pmEST Tuesday May 14<sup>th</sup>.

Thank you in advance

 / CTV National

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**External Email:** Please use caution when opening links and attachments / **Courriel externe:** Soyez prudent avec les liens et documents joints

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**External Email:** Please use caution when opening links and attachments / **Courriel externe:** Soyez prudent avec les liens et documents joints

<Sea lice infographic\_EN.pdf>

s.19(1)

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Friday, May 17, 2019 8:37 AM  
**To:** Fogliato, Cara; Patirana, Anoma  
**Cc:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO); Johal, Sharan; Delaney, Paula; Barton, Meagan; Mauro, Richard; Campbell, John P.; Moore, Wayne  
**Subject:** [REDACTED]

[REDACTED]

Thank you and heads up to John and Wayne,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.23

**From:** Fogliato, Cara <Cara.Fogliato@dfo-mpo.gc.ca>  
**Sent:** Thursday, May 16, 2019 4:10 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Cc:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>; Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>; Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Mauro, Richard <Richard.Mauro@dfo-mpo.gc.ca>  
**Subject:** [REDACTED]  
**Importance:** High

Hi Allison/Anoma,

[REDACTED]

Thank you!

### Cara Fogliato

A/Executive Assistant to the Regional Director General/ Assistant Exécutif au Directrice Général Régional  
Tel: 604-666-1376/Fax: 604-666-8956

**From:** Pastorek, Doug <Doug.Pastorek@dfo-mpo.gc.ca>  
**Sent:** May-16-19 3:42 PM  
**To:** Church, Ashley <Ashley.Church@dfo-mpo.gc.ca>; PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca>; Fogliato, Cara

<Cara.Fogliato@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>; Robinson, Connor  
<Connor.Robinson@dfo-mpo.gc.ca>; Jarjour, Jasmine <Jasmine.Jarjour@dfo-mpo.gc.ca>  
Cc: Sharzer, Stephen (DOJ) <stephen.sharzer@justice.gc.ca>; Birba, Rose Gabrielle (DOJ) <Rose-  
Gabrielle.Birba@justice.gc.ca>; Beaton, Heather (DOJ) <Heather.Beaton@justice.gc.ca>; House, Matthew (DOJ)  
<Matthew.House@justice.gc.ca>; Levesque, Marie-Pier (DOJ) <marie-pier.levesque@justice.gc.ca>; O'Brien, Jackie  
<Jackie.O'Brien@dfo-mpo.gc.ca>; Laframboise, Leslie (DOJ) <Leslie.Laframboise@justice.gc.ca>

Subject: [REDACTED]

Importance: High

All,

[REDACTED]

***Doug Pastorek***

Director, Business & Administrative Affairs | Directeur, Affaires administratives et d'entreprise

Legal Services | Services Juridiques

Office | Bureau: 8S028

Phone | Téléphone : (613) 993-2426

e-mail | courrier élec. : [doug.pastorek@dfo-mpo.gc.ca](mailto:doug.pastorek@dfo-mpo.gc.ca)

Fisheries and Oceans Canada | Pêches et Océans Canada

s.23

200 Kent Street, Ottawa, Ontario K1A 0E6 | 200, rue Kent Ottawa, Ontario K1A 0E6  
Government of Canada | Gouvernement du Canada

No information has been removed or severed from this page



## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, May 17, 2019 9:30 AM  
**To:** Wilkinson, Davida; House, Matthew (DOJ); Campbell, John P.; Moore, Wayne  
**Cc:** Fogliato, Cara; Barton, Meagan  
**Subject:** Version with attachments to be added  
**Attachments:** MECTS-#4052557-v1-Scenario-Note-Min\_Meeting\_ [REDACTED] PRV\_policy\_May\_2019\_LM  
ND AWedits\_.DOCX

Please see an early copy for your review [REDACTED]

We will add the following attachments – letters from Ecojustice, Namgis presentation from meeting this week, sea lice deck and bio for Jonathon Moore requested by Min – before this goes through formal approvals.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)

s.23



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Approved by SADM

Docket #: 2019-009-00257  
Security Classification: UNCLASSIFIED

## **SCENARIO NOTE**

MEETING WITH [REDACTED]  
VANCOUVER, BC

### **Overview**

You are scheduled to meet with [REDACTED] on Wednesday, May 22, 2019. You will be accompanied by Rebecca Reid (Regional Director General, Pacific Region), Lesley MacDougall (A/Division Manager, Science Branch, Pacific Region) and Matt House (DFO Legal Counsel). The purpose of the meeting is to listen to [REDACTED] views on testing of salmon smolts for *Piscine Orthoreovirus* (PRV) prior to their transfer to the marine environment ("PRV policy") and the interpretation of Judge Strickland's decision in February 2019. [REDACTED] may also wish to discuss DFO's approach to the management of sea lice and raise concerns about potential impacts to wild salmon.

[REDACTED] is a critic of salmon aquaculture with a significant following in BC and beyond. Her research is supported by environmental organizations opposed to salmon farming, such as the Raincoast Research Society and the Pacific Salmon Foundation. [REDACTED] has brought numerous lawsuits against the Minister regarding the regulation of the aquaculture industry in BC and, most recently, concerning DFO's "PRV policy".

This meeting will provide you the opportunity to share a high level perspective on a renewed approach for considering PRV in s. 56 *Fishery (General) Regulations* (FGR) transfer licence decisions, including:

1. Framework for Aquaculture Risk Management (FARM) and;
2. Conclusions of the 2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon; and
3. Interpretations of Justice Strickland's decision.

[REDACTED] may also raise concerns regarding her finding of elevated sea lice levels in recently sampled wild fish near two salmon farms in the Broughton Archipelago, and the potential attribution of wild/farmed fish interactions to this finding.

### **Framework for Aquaculture Risk Assessment (FARM)**

The FARM provides a more structured and transparent process for aquaculture decision-making, including explicit consideration of the precautionary approach and risk mitigation. It is modelled after the Sustainable Fisheries Framework (SFF) in applying the precautionary approach to fisheries management. The FARM is supported by a series of documents providing detailed information on how and when precaution is applied, as well as how effects of aquaculture are considered and managed.

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### **Minister's Objectives**

To communicate to [REDACTED] that the FARM will increase transparency around all DFO aquaculture decision-making processes and clarify how precaution is taken into account in decision making.

### **Key Messages**

- **The Government of Canada is committed to ensuring aquaculture activities are undertaken in a manner that is environmentally responsible and sustainable which is why I announced as part of a number of additional measures the development of a Framework for Aquaculture Risk Management in 2018.**
- **The FARM is modelled on the Sustainable Fisheries Framework and consistent with that, will clarify how decisions are made including how precaution is considered within that process.**
- **The FARM will be posted for public consultation shortly and I invite you to submit your comments during the consultation period.**

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s.21(1)(a)  
s.21(1)(b)

### **2019 CSAS PRV risk assessment on the risk of PRV to Fraser River Sockeye salmon**

From January 28 to 30, 2019, the Canadian Science Advisory Secretariat (CSAS) conducted a meeting to review scientific evidence and to provide science advice on the risk to Fraser River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands area, British Columbia. Subject matter experts were identified by the steering committee struck for this peer review meeting which included one DFO and one external Chairperson. [REDACTED]

The scientific experts who peer reviewed the data and risk assessment reached a consensus that PRV does not pose more than a minimal risk to the viability of Fraser River sockeye salmon conservation units, or species biodiversity. The assessment was conducted based on the latest Canadian and international data. The formal PRV Risk assessment will have two components – “science advice” which is currently going through peer review and two supporting documents (risk assessment and science review) which are expected to be released in May 2019.

Consensus was reached for all of the key summary bullets; however consensus was not reached for the determination of the level of uncertainty associated with the likelihood score. Inability to reach consensus on this point has been questioned in the media.

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### **Minister's Objectives**

Provide a high level understanding of the PRV risk assessment outcome and robustness of the process.

### **Key Messages**

**The peer review participants reached a consensus that the risk to Fraser River sockeye salmon due to PRV transfer from Atlantic salmon farms located in the Discovery Islands is minimal.**

- **The risk assessment on PRV was peer-reviewed by domestic and international scientists with expertise in salmon biology, physiology, fish health and epidemiology. This follows the Government of Canada policy and DFO's Canadian Science Advisory Secretariat (CSAS) peer review process for making sound scientific advice.**
- **As there are still some important knowledge gaps in our understanding of PRV, DFO will continue to be vigilant about risks to Fraser River Sockeye. The department will continue its scientific research on PRV as well as relying on domestic and international experts in this field, and the peer review process, to apply the best science available when making management decisions for Canada's aquaculture sector.**
- **I am interested in better understanding any concerns that you might have with our Canadian Scientific Advisory Secretariat process and/or approach to considering scientific information.**

### **Interpretation of Justice Strickland's Decision**

Justice Strickland's decision directed DFO to reconsider its approach to testing for PRV and also opined in a number of other areas including the use of aggregates and better explanation of how potential impacts to wild fish have been considered in making decisions on transfers of fish. DFO has been completing significant work to address the court direction and has developed a document on which it intends to consult that explains many of the areas where the court pointed out shortcomings in the current management approach.

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### **Minister's Objective**

To listen to [REDACTED] concerns in the areas where Justice Strickland provided further direction and action for DFO and indicate that the Department does intend to address the court's direction by the deadline of June 4, 2019.

### **Key Messages**

- **I am interested in hearing your views regarding the court's direction in the recent case related to PRV.**
- **DFO is currently working on an approach that will consider the court direction including how to better articulate and consider potential impacts to wild fish before decisions on transfers are made.**
- **DFO intends to engage more broadly on this approach before it is finalized to take into account the range of views on this subject.**

### **Elevated Sea lice levels in wild fish in the Broughton**

[REDACTED] has recently been raising concern on social media about high levels of sea lice present on wild fish in the Broughton Archipelago. She is urging people to contact the Minister directly to demand the 'removal of all lice infected fish'. Documents obtained through the *Access to Information Act* also indicate concerns over a period of time by internal DFO staff related to elevated sea lice levels on certain farms. It is likely that these will be referenced, and that [REDACTED] will raise concerns regarding the current Conditions of Licence, and their enforceability.

Following the requirements in Conditions of Licence, and consistent with the Fish Health Audit and Intelligence Program, regular reporting on farm lice levels are required and audits are being conducted by DFO staff. In the month of April nine marine sites were audited by DFO biologists in the Broughton Archipelago, and none had motile sea lice (*L. salmonis*) levels above the reporting threshold of 3 motile lice per fish. [REDACTED] has stated that 90% of young wild salmon near Cermaq's Burdwood and Sir Edmund salmon farms in the Broughton Archipelago are currently infected with sea lice. On May 7<sup>th</sup> DFO field staff audited these two farms and found sea lice levels to be far below threshold. She may also raise issues with sites in the Clayoquot Sound area where there have been some issues in the past.

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At this time facilities in the Broughton have initiated preventative treatment and are in compliance with respect to their sea lice management conditions of licence. Should lice levels not remain under threshold, facilities are required to report any issues and would be required to initiate a secondary plan to reduce lice levels. Given some limited exceedances in the past and recent advice from Conservation and Protection [REDACTED] DFO is currently considering a range of options to improve our regulation of the sea lice. This work is fairly preliminary and has not been discussed publicly, but changes are expected in 2020.

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### **Minister's Objectives**

To communicate that DFO takes a precautionary approach to minimizing sea lice levels on farms through mandatory monitoring, mitigation, treating and reporting, and conducts audits/inspections to ensure industry compliance with conditions of licence. All data is publicly available for review to promote transparency of information as well.

### **Key Messages**

- **Under the *Pacific Aquaculture Regulations*, DFO requires salmon farming companies to regularly monitor and manage sea lice levels at their facilities in BC. DFO also regularly conducts assessments of sea lice abundance at these facilities.**
- **Companies in BC must submit a lice reduction plan if monitoring shows sea lice levels higher than three motile sea lice per farmed fish during the wild salmon outmigration period from March 1 to June 30 of each year.**
- **As per standard practice for the Fish Health Audit and Intelligence Program, DFO increases its audits of all active sites during the wild salmon outmigration period. This information is publicly available and reported on the DFO website.**
- **Recent DFO audits of farms in the Broughton found all sites to be below the 3 motile lice per fish threshold and good agreement between industry reported lice numbers to those recorded by DFO.**
- **As part of DFO's adaptive management approach, the department is examining the sea lice data from our fish health audit and intelligence program and working with BC to look at options that better use an integrated approach to pest management. It is also possible that different approaches may be taken under an Area Based Management approach.**

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Fisheries and Oceans Canada  
Correspondence Routing Slip

Fiche d'acheminement de correspondance  
Pêches et Océans Canada

UNCLASSIFIED  
GCCMS #: 2019-009-00257  
EKME #: 4052557

To: Timothy Sargent  
Pour:

Date:

Object: **MINISTER MEETING WITH** [REDACTED]  
Objet:

From / De: Andrew Thomson, Regional Director, Fisheries Management, Pacific

Via: Rebecca Reid, Regional Director General, Pacific

Additional approvals:  
Autre(s) approbation(s):

Phillipe Morel  
Assistant Deputy Minister  
Aquatic Ecosystems

Aaran McPherson  
Assistant Deputy Minister  
Ecosystems and Oceans Science

Stephen Sharzer  
Senior General Counsel  
Legal Services, NCR

☐

Material for the Minister  
Documents pour le Ministre

☐

Your Signature  
Votre signature

☒

Information

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors:  
Jay Parsons, Director, Ecosystems and Ocean Science, NCR  
Lesley MacDougall, A/Regional Director, Science, Pacific  
Ed Porter, Manager, Aquaculture Management Directorate, NCR

s.19(1)  
s.23

Distribution:

[REDACTED]

Drafting Officer/  
Rédacteur:

ANOMA PATIRANA (604) 666-9571 / Allison Webb / pd

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 17, 2019 10:25 AM  
**To:** Robinson, Connor; Johal, Sharan  
**Subject:** RE: Sea Lice deck

Will double check right now and get back to you within 5-10 min.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 17, 2019 10:23 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Cc:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Subject:** Sea Lice deck  
**Importance:** High

Allison/Sharan,  
Are you able to validate that the attached is the correct version of the sea lice deck for the Min briefing package? If not, can you send me the right version asap.  
Thanks,  
Connor

**Connor Robinson**  
Advisor to the Associate Deputy Minister  
613-990-0020



## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 17, 2019 10:30 AM  
**To:** Robinson, Connor  
**Cc:** Johal, Sharan  
**Subject:** RE: Sea Lice deck

Yes it is the correct and most current version.

Thanks Connor,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 17, 2019 10:23 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Cc:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
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**Importance:** High

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Connor

**Connor Robinson**  
Advisor to the Associate Deputy Minister  
613-990-0020

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, May 20, 2019 3:02 PM  
**To:** Waddington, Zac  
**Subject:** FW: Sea Lice deck  
**Attachments:** MECTS-#4052560-v1-Attachment\_1\_\_AMD\_slides\_for\_MINO\_sea\_lice\_deck\_v2  
(002).PPTX.ppt  
  
**Importance:** High

Here is the latest copy of the deck that would be useful for you to see in advance of the briefing. Questions might be related to this.

Thanks Zac,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 17, 2019 10:23 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Cc:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Subject:** Sea Lice deck  
**Importance:** High

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Thanks,  
Connor

**Connor Robinson**  
Advisor to the Associate Deputy Minister  
613-990-0020

**Pages 228 to / à 249  
are duplicates of  
sont des duplicatas des  
pages 103 to / à 124**

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, May 21, 2019 8:48 AM  
**To:** Wilkinson, Davida  
**Subject:** FW: Sea Lice deck  
**Attachments:** MECTS-#4052560-v1-Attachment\_1\_\_AMD\_slides\_for\_MINO\_sea\_lice\_deck\_v2  
(002).PPTX.ppt

**Importance:** High

Here it is. Tx so much,  
A

Allison Webb, Director / Directrice  
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Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 17, 2019 10:23 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Jahal@dfo-mpo.gc.ca>  
**Cc:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Parsons, Jay  
<Jay.Parsons@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Campbell, John P.  
<John.Campbell@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Johal, Sharan  
<Sharan.Jahal@dfo-mpo.gc.ca>  
**Subject:** Sea Lice deck  
**Importance:** High

Allison/Sharan,  
Are you able to validate that the attached is the correct version of the sea lice deck for the Min briefing package? If not,  
can you send me the right version asap.  
Thanks,  
Connor

**Connor Robinson**  
Advisor to the Associate Deputy Minister  
613-990-0020

**Pages 251 to / à 266  
are duplicates of  
sont des duplicatas des  
pages 179 to / à 194**

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Tuesday, May 21, 2019 10:24 PM  
**To:** Dostal, Alexandra; Parsons, Jay; Campbell, John P.; Haesevoets, Roderick; Moore, Wayne; Lowe, Carmel; MacDougall, Lesley; House, Matthew (DOJ)  
**Subject:** FW: Follow up from Minister's briefing on PRV and Sea Lice

Sorry, but I just got a delivery failure on this email so am trying again. Apologies if you are receiving this twice.

---

**From:** Webb, Allison  
**Sent:** May 21, 2019 10:02 PM  
**To:** Dostal, Alexandra; Parsons, Jay; Campbell, John P.; Haesevoets, Roderick; Moore, Wayne  
**Subject:** RE: Follow up from Minister's briefing on PRV and Sea Lice

Hi Alix - I just did a similar type of list with my management team this aft and have a few additions/comments below. Comments in yellow so that they can be differentiated.

Other aspects that were not specifically raised during the briefing today, but need to be completed are the following:

- Practitioners Guide
- Plan by Science Pac for completion of work on aggregates, stock status etc
- Response to 'Namgis Letter of March 29, 2019
- Chinook Analysis related to PRV and/or other species if possible
- Papers in bibliography to be provided to 'Namgis
- completion of CSAS PRV RA documents and sharing of these documents as per engagement strategy indicated below

Look forward to discussing and developing deadlines for each as time is very tight,  
Allison

---

**From:** Dostal, Alexandra  
**Sent:** May 21, 2019 2:41 PM  
**To:** Campbell, John P.; Haesevoets, Roderick; Moore, Wayne; Parsons, Jay; House, Matthew (DOJ); Sharzer, Stephen (DOJ); McPherson, Arran; Webb, Allison; Reid, Rebecca; Struthers, Alistair  
**Cc:** Proctor, Jody; Robinson, Connor; Dostal, Alexandra; Richter, Julie  
**Subject:** Follow up from Minister's briefing on PRV and Sea Lice

Colleagues,

Coming out of today's briefing and in advance of our conversation tomorrow with the DM and Kevin, I thought I would lay out what I think are the key next steps/outstanding pieces, along with who I suggest may be the lead for the next step. I'd also like to ask Justice for their advice on whether this list accurately captures what we need to do to follow their previous advice on this file.

Please let me know what I am missing or what changes you would like to see to this list:

1. **Guidance Document-** to be updated to more clearly articulate uncertainty and to ensure consistency in definition of precaution (Jay to update per briefing today with support of AMD). Guidance document also needs to go to translation (AMD to send).(need to also ensure that it is clear what the scope of this is - finfish only or ? . There are some outstanding comments from Science and SEP that may need to be incorporated/discussed. Recommend a brief meeting of a small group of AMD NHQ, Pac and Science Pac and NHQ and SEP to finalize draft for review)

2. **Guidance document** - question about healthy fish stocks and risk and also the question about population impacts (perhaps we could discuss more tomorrow at our 12:30 call tomorrow).
3. **Decision Memo for Minister** – we will need to get a draft completed this week to go up (AMD)
4. **Timing follow up** – [REDACTED]
5. **Approaches if interim guidance** - Pacific region working on this. Possible need to engage CFIA (would this be AMD?)(AMD Pac will provide a document on approach to testing including resultant actions to be taken if fish test positive for PRV. It would be useful to engage CFIA as well.
6. **Communications plan** – to include next steps on tech study, area based management, other elements. **Linkages** to Area Based Management should be woven into the storyline if possible. When will draft be circulated? (comms)
7. **Next steps on tech study/closed containment** – briefing for Minister early june (AMD)
8. **Next steps on 'Namgis consultation** – Plan for next steps (Pacific)
9. **Engagement to June 4** – engagement with SMC, ENGOs, CAIA. We can discuss tomorrow. (AMD, Pacific)
10. **Engagement for after June 4** – tech tables? Proposal being put together this week (AMD)
11. **Question about Steelhead** – Science to address at next briefing with Minister (Science)
12. **Sea lice** – questions from Minister (Pacific)

Please let me know what feedback you have and I am happy to adjust and send another version tonight.

Alix

**Alix Dostal**

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture

Telephone | Téléphone: 613-993-1884

[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)

Government of Canada | Gouvernement du Canada

s.21(1)(a)

s.21(1)(b)

s.23

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, May 21, 2019 10:26 AM  
**To:** Reid, Rebecca  
**Subject:** RE: Sea lice

I need to ask our vet about this circumstance as I am not aware of it and wasn't here at that time. I will check into this before tomorrow.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Sent:** Tuesday, May 21, 2019 10:25 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea lice

Sent from my Samsung Galaxy smartphone.

s.21(1)(b)



## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, May 21, 2019 11:14 AM  
**To:** MacDougall, Lesley; Jones, Simon; Higgins, Mark; Candy, John  
**Subject:** RE: sea lice CSAS TOR?

Hi Lesley – Let's chat about this tomorrow after the Min pre-brief.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Tuesday, May 21, 2019 11:13 AM  
**To:** Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>; Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Candy, John <John.Candy@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** sea lice CSAS TOR?

Hi all – as you all know, there is an increasing interest in where we are with sea lice advice and management right now. I recall from my CSAS coordinator days that Simon and Zac had reviewed the sea lice RSIA, and kicked around some ideas and there was a sense that we weren't too far away from developing a Terms of Reference to address the AMD Sea Lice RSIA that is on the books.

I'd like to revisit that in the near future – I know Zac [REDACTED] but is there work we can be doing to draft a TOR?

I've looped John Candy in to this conversation as well, as he will need to let us know if there is any room in the CSAS schedule to accommodate us as we start to consider potential delivery

thanks

Lesley MacDougall  
A/Division Manager, Aquatic Diagnostics, Genomics & Technology / Division des diagnostics, la génomique, de la technologie aquatique  
Fisheries and Oceans Canada / Pêches et Océans Canada  
Pacific Biological Station / Station Biologique du Pacifique  
Nanaimo, B.C. V9T 6N7  
250-756-7395  
[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)

s.19(1)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, May 21, 2019 11:15 AM  
**To:** Paylor, Adrienne; Waddington, Zac; McConnachie, Sarah  
**Subject:** FW: sea lice CSAS TOR?

FYI – Adrienne I'd like to chat to you about this today/tomorrow am.

Tx,  
A

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Tuesday, May 21, 2019 11:13 AM  
**To:** Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>; Higgins, Mark <Mark.Higgins@dfo-mpo.gc.ca>; Candy, John <John.Candy@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** sea lice CSAS TOR?

Hi all – as you all know, there is an increasing interest in where we are with sea lice advice and management right now. I recall from my CSAS coordinator days that Simon and Zac had reviewed the sea lice RSIA, and kicked around some ideas and there was a sense that we weren't too far away from developing a Terms of Reference to address the AMD Sea Lice RSIA that is on the books.

I'd like to revisit that in the near future – I know Zac [REDACTED] but is there work we can be doing to draft a TOR?

I've looped John Candy in to this conversation as well, as he will need to let us know if there is any room in the CSAS schedule to accommodate us as we start to consider potential delivery

thanks

Lesley MacDougall  
A/Division Manager, Aquatic Diagnostics, Genomics & Technology / Division des diagnostics, la génomique, de la technologie aquatique  
Fisheries and Oceans Canada / Pêches et Océans Canada  
Pacific Biological Station / Station Biologique du Pacifique  
Nanaimo, B.C. V9T 6N7  
250-756-7395  
[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)

s.19(1)

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Tuesday, May 21, 2019 11:27 AM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** Draft\_Reply\_2019-001-01245.docx  
**Attachments:** MECTS-#4052529-v2-Draft\_Reply\_2019-001-01245.docx; 2019-001-01245.pdf

Hi Allison,

This was initially drafted from approved text. We sent it to Adrienne Paylor to get answers to the two specific questions in the incoming. I think we are now over-answering. So I have highlighted the draft to better outline my proposed edits.

Unhighlighted text is the previously approved text. Yellow is text added by Adrienne that I think answers the questions and should stay. Green highlights are text added by Adrienne that I think is unnecessary (already known by the writers) and too technical.

[REDACTED]

We're looking for your approval on this draft response **by noon Wednesday, but sooner if at all possible.**

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

Your review should also include technical accuracy and consistency with policy direction.

**If you think someone else in Pacific Region** [REDACTED] **must approve and they aren't on our approval list, please advise us ASAP and we will forward the documents for their approval.**

Thanks,

Heather

**\*\*Please direct all e-mails regarding ministerial correspondence to XPAC PRMCU.\*\***

Candace McGuire, Heather Fowlie and Alison Jacques

Manager, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/ Government of Canada  
XPACPRMCU@dfo-mpo.gc.ca Tel 604-666-0823

s.21(1)(a)

s.21(1)(b)

s.23

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada/Gouvernement du Canada  
XPACPRMCU@dfo-mpo.gc.ca Tel 604-666-0823

## Ministerial Correspondence / Correspondance ministérielle Approval Form / Formulaire d'approbation

MCCU DOCKET # / N° DU DOSSIER UCCM : 2019-001-01245	MCCU CONTACT / RESPONSABLE À L'UCCM :
REPLY BY MINO / RÉPONSE DU MINISTRE	

### DATE AND DEADLINES / DATE ET ÉCHÉANCE

DUE DATE TO MINO / ÉCHÉANCE AU CM : (mm-dd-yyyy / mm-jj-aaaa)	/2019	DATE RECEIVED IN MCCU / DATE DE RÉCEPTION À L'UCCM : (mm-dd-yyyy / mm-jj-aaaa)	/2019
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### COMMENTS / APPROACH – COMMENTAIRES / APPROCHE

Drafted from previously approved text in 2019-001-02315

### APPROVALS / APPROBATIONS

Level / Niveau	Name, Title and Sector / Nom, titre et secteur	Assigned Date / Date fixée	Date Due / Échéance	Date Approved / Date d'approbation	Changes / Modifications
	Adrienne Paylor Regional Manager, Aquaculture Environmental Operations, Fisheries Management			May 21, 2019	Yes
Director / Directeur(trice)	Allison Webb Director, Aquaculture Management Div., Fisheries Management Branch				
cc Heather Owens	Doug Pastorek, Director, Business & Administrative Affairs Legal Services				
Regional Director / Directeur(trice) régional(e)	Andrew Thomson Regional Director, Fisheries Management Branch				
	Approvals needed in Ottawa? Yes / No				
IF NECESSARY / SI NÉCESSAIRE					
Regional Director General / Directeur(trice) général régional(e)	Rebecca Reid, Regional Director General, Pacific Region				
ADM / RDG / DC / CO / AC SMA / DGR / SA / BC / CA					
Indigenous Affairs / Affaires autochtones Legal / Services juridiques IGA / AI					
IF / SI PROVINCIAL / TERRITORIAL					
DM / SM					
PCO / BCP					

### OTHER CONSULTATIONS / AUTRES CONSULTATIONS

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•	• Manager, Ministerial Correspondence, Pacific Region
OGD / AMG - (Name, Title, Branch, Date / Nom, titre, direction, date)	
•	

- 2 -

**FOR MCCU USE / RÉSERVÉ À L'UCCM**

b.c.c. / Cc - (Name, Department / Nom, ministère)	c.c. - (Name, email address / contact info / Nom, courriel, coordonnées)
•	•
<b>ATTACHMENTS TO RESPONSE / PIÈCES JOINTES À LA RÉPONSE</b>	
•	

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[REDACTED]  
Barristor & Solicitor  
Ecojustice  
[REDACTED]  
[REDACTED]

Thank you for your correspondence of May 13, 2019 regarding sea lice in British Columbia.

Fisheries and Oceans Canada (DFO) shares your concern for wild salmon. DFO fish health specialists and veterinarians conduct more than 160 fish health and sea lice audits each year on net pen salmon farms operating in British Columbia's marine environment. Diagnostic services are provided by an accredited animal health laboratory.

In addition, DFO biologists conduct random inspections to monitor compliance with licence conditions. DFO biologists also conduct inspections at freshwater hatcheries where salmon are destined for marine net pens. During these inspections, DFO auditors review documents, practices, biosecurity, and husbandry to monitor compliance with licence conditions.

DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. During most years, more than 90 percent of sites in British Columbia are below the regulatory thresholds (three motile sea lice per farmed fish) for sea lice during the wild salmon out-migration period from March 1 to June 30 of each year. Sea lice populations are affected by environmental conditions and thrive in warm water temperatures and high salinity levels.

Commented [FH1]: Added by Adrienne Paylor

Prior to issuing a licence to transfer live fish, the Minister must be satisfied that each of the three preconditions outlined in *Fishery (General) Regulations* (FGR) s.56 are met. When considering applications for the movement of fish, an assessment of risk related to FGR s.56(b) and (c) will be conducted on susceptible aggregates of species known to be present in the vicinity of the proposed movement. The health of fish to be moved will be assessed by DFO by reviewing a number of indicators or predictors of population health including: biosecurity at the source facility, mortality at the source facility, vaccination status of the fish to be moved, veterinary oversight, clinical sign(s) of disease in the fish to be moved, health

Commented [FH2]: "a sampling..."?

.../2

Best available copy

- 2 -

history at the source facility and disease or disease agent prevalence in the population to be moved, where available. When a disease or disease agent is detected in a population to be moved, an assessment of the risk that this poses will be conducted. When concerns about drug resistant sea lice exist for an area these fish would not be moved until the risk was mitigated.

This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1). In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction. Two of the three farms in question have since been completely harvested and the third will complete harvesting by the end of May. The remaining Cermaq farms in the Clayquot region have been below acceptable levels during the outmigration period. In 2018, there were exceedances for Cermaq farms in Clayquot Sound and challenges resolving this situation which led to media attention and increased scrutiny. Efforts by DFO staff to work with C&P to lay charges were unsuccessful.

In the Broughton Archipelago, data show that all farms were within the threshold during the 2019 outmigration period. DFO audited 9 farms in the Broughton in April and another two in May which were all below threshold. Sea lice resistance has never been observed to date in the Broughton area. In addition, DFO conducted targeted sea lice audits at Cermaq sites, Burdwood and Sir Edmund Bay on May 7th. Sea lice levels at both sites were below reporting threshold for this quarter, Burdwood's motile lice levels (*Lepeoptherus*) was 0.23 lice/fish while Sir Ed motile lice levels (*Lepeoptherus*) were at 1.5 lice/fish. In addition to three pens sampled at each site, 20 fish per pen, a visual inspection of the fish in all the pens was conducted at both sites and no concerns were noted, from the surface no lice damage was noted. Sea lice records on site were compared with those submitted to DFO for pre SLICE treatment sampling (March –April lice numbers) and no discrepancies were noted between submitted data and on site records.

As challenges have emerged with sea lice management in several areas of the coast, DFO is considering a range of new approaches to manage including:

- changing of conditions of license to improve enforceability
- changing conditions of license to be influenced by area-specific out-migration periods for juvenile wild salmon
- use of modelling to develop area-based management for lice
- consideration of farm and area level cumulative effects
- continued implementation of new lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- improved public communication through more interactive online tools such as [Barents Watch](#)

DFO, the Province of British Columbia, industry, and academics are continuing to [research](#) and develop alternative methods to manage sea lice. The rotational use of alternative methods and technologies is part of an integrated pest management approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish.

- 2 -

DFO's Environmental management reports for aquaculture in British Columbia website includes information on the Department's work to manage disease and parasites, reduce disease risks, and treat outbreaks.

The Department is working to ensure that aquaculture practices consider, assess, and mitigate impacts on the environment. We are updating our risk management framework for aquaculture, which will embody a clear understanding of unacceptable harm. The update will embrace precautionary approaches where uncertainty exists and will fully engage the public and Indigenous peoples. DFO will also be initiating an economic technology feasibility and status study with respect to alternative technologies including closed containment aquaculture.

I believe we can continue to work to encourage greater sustainability in aquaculture, and to support the recovery of wild salmon. Thank you for writing.

Yours sincerely,

Jonathan Wilkinson, P.C., M.P.  
Minister of Fisheries, Oceans and the Canadian Coast Guard



VANCOUVER CALGARY TORONTO OTTAWA HALIFAX

ecojustice

2019-001-01245

May 13, 2019

Sent via email: [min@dfo-mpo.gc.ca](mailto:min@dfo-mpo.gc.ca)

Department of Fisheries and Oceans Canada  
Justice Building, Suite 9  
House of Commons  
Ottawa, Ontario, K1A 0A6

Suite #390, 425 Carrall Street  
Vancouver, BC, V6B 6E3  
Tel: 604-685-5618 ext. [REDACTED]  
Email: [REDACTED]

Suite #390, 425 Carrall Street  
Vancouver, BC, V6B 6E3  
Tel: 604-685-5618 ext. [REDACTED]  
Email: [REDACTED]

**Attention: The Honourable Minister Jonathan Wilkinson, Minister of Fisheries, Oceans  
and the Canadian Coast Guard**

Dear Minister Wilkinson,

**Re: Addressing sea lice outbreaks on salmon farms in British Columbia**

We write on behalf of [REDACTED] to request information about how sea lice (*Lepeoptheirus salmonis*) infection on salmon farms in British Columbia is considered and addressed.

[REDACTED] has obtained information that Department of Fisheries and Oceans ("DFO") officials are of the opinion that the Conditions of Licence ("COLs") regarding excess sea lice numbers are unenforceable and thus they are prevented from ensuring meaningful action is taken to protect wild salmon when sea lice on BC-based salmon farms exceed allowable limits. This is highly concerning for [REDACTED] – and should be for you, too – because it meant responses to outbreaks in 2017 and 2018 were inadequate, and a similar dynamic appears to be underway in 2019.

The same information obtained by [REDACTED] suggests that excessive sea lice infection is not considered when issuing transfer licences for farmed fish under s. 56 of the *Fishery (General) Regulations* ("FGRs"). Again, such a practice would be highly concerning – drug resistance in sea lice appears to be on the rise in BC and thus impacts of sea lice infection for wild salmon migrating passed destination farms may be severe, especially for juveniles from at-risk Conservation Units.

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2019-001-01245

May 28 4052529 MIN

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We request that you respond to this letter by addressing the following questions:

1. Do you plan on amending the COLs so that the restriction on the number of lice allowed per farm salmon is enforceable? DFO officials find the current conditions ineffective and they have on multiple occasions requested that the conditions be modified.
2. Can you please explain if and how drug resistance in sea lice is considered prior to issuing transfer licences for farmed fish moving between marine sites under s. 56 of the *FGRs*?

### **Background**

#### ***Serious sea lice outbreaks on BC farms in three different regions in the last three years***

The direct relationship between the number of sea lice per farm salmon and lethal sea louse infection of juvenile wild salmon in BC is well-established in the scientific literature.<sup>1</sup>

[REDACTED] has been examining young wild salmon that migrate past open-net fish farms along BC's coast. While lice were successfully suppressed on salmon farms for a period of time after she initially raised the issue in 2001, public reporting and internal DFO correspondence has revealed a disturbing trend; farms are increasingly unable to control their sea lice, and DFO veterinarians and officials are unable to require companies to control lice, or prohibit husbandry considered high-risk to wild salmon.

In 2017, there were drug resistant sea lice outbreaks on farms located in Nootka Sound in Mowachaht, Muchalaht, Nuchatlaht, and Ehatesaht territories. In 2018, there was a drug resistant lice outbreak in Clayoquot Sound farms in Ahousaht territory. And in April of this year, in addition to hearing that sea lice levels are again lethally high on wild salmon in Clayoquot Sound, [REDACTED] found 90% juvenile infection near two salmon farms in the Broughton Archipelago in Musgamagw Dzawada'enuxw territory.

[REDACTED] is very concerned because the April sea louse prevalence levels in the Burdwood Island region, central to the Broughton Archipelago, have returned to the original 2001 levels

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<sup>1</sup> See e.g., Krkosek, M., Connors, B. M., Ford, H. Peacock, S., Mages, P., Ford, J. S., Morton, A., Volpe, J. P. Hilborn, R. Dill, L. M. Lewis, M. A. 2011. Fish farms, parasites, and predators: Implications for salmon population dynamics. *Ecological Applications* 21:897–914;

Krkosek, M., J.S. Ford, A. Morton, S. Lele, R.A. Myers, and M.A. Lewis. 2007. Declining Wild Salmon Populations in Relation to Parasites from Farm Salmon. *Science* 14 December 2007: Vol. 318. no. 5857, pp. 1772 - 1775. DOI: 10.1126/science.1148744;

Krkosek, M., M.A. Lewis, A. Morton, L.N. Frazer, and J.P. Volpe. 2006. Epizootics of wild fish induced by farm fish. *Proceedings of the National Academy of Sciences*. PNAS published October 4, 2006, 10.1073/pnas.0603525103; Morton, A.B., and Routledge, R. 2005. Mortality rates for juvenile pink *Oncorhynchus gorbuscha* and chum *O. keta* salmon infested with sea lice *Lepeophtheirus salmonis* in the Broughton Archipelago. *Alaska Fishery Research Bulletin* 11(2):146-152.

s.19(1)

which precipitated the Broughton Pink Salmon population crash of 2002 (see reporting in Provincial Pink Salmon Action Plan). This crash triggered the development of the current sea lice restrictions on farm salmon.

***Salmon farm Conditions of Licence are unenforceable and thus do not ensure appropriate actions are taken to protect wild salmon from salmon farm sea louse outbreaks***

Adding to ██████████ concern is DFO's apparent inability to ensure that salmon farm husbandry does not put wild salmon at further risk from sea lice. For example, DFO officials were unable to require Cermaq to empty a farm in Clayoquot Sound prior to the 2018 juvenile wild salmon migration, despite instructing the company to do so.<sup>2</sup> Nor were they able to stop Grieg Seafood from sending fish infected with drug resistant sea lice into a farm in the Broughton Archipelago<sup>3</sup> and for processing at the Browns Bay packing plant where live lice were released into the Discovery Islands area.<sup>4</sup>

Materials provided pursuant to the *Access to Information Act* ("ATIA") clearly demonstrate that COLs are not strong enough to ensure protection of wild salmon, in accordance with your mandate. We have attached excerpts of these ATIA materials for your reference.

It appears that the COLs only require fish farm operators to develop, follow, and report on a "plan" to address a sea lice outbreak, with no requirement that the "plan" successfully reduce the number of sea lice in salmon farms.<sup>5</sup>

DFO officials' frustration with their inability to address sea lice outbreaks through the COLs is captured by a May 2018 email between DFO Conservation and Protection officials. In that email a DFO Fishery Officer states:

*C&P staff looked at this COL in the past and recommended a change as it was not viewed as enforceable. As I understand it, despite the recommendation, no changes were made to the COL and the current wording became fixed for the duration of the licence. A major limitation of the multi-year licences is that COLs may not be amended except for "the purposes of the conservation and protection of fish" (Fishery (General) Regulations, sec. 22(2)). This issue came up last year with an issue of large numbers of sea lice at Grieg on the West coast of Vancouver Island and C&P was asked investigate. However, the only thing that a company can be compelled or held legally accountable for is "implementing a plan" – whatever that means. There is no measure of quantifiable action that we can determine happened or not. As long as the company*

<sup>2</sup> Appendix, Tab 1, Email from Dr. Ian Keith to unknown, sent on May 11, 2018, at 4:02 pm, ATIP A-2018-00799 at pp 235-236.

<sup>3</sup> Appendix, Tab 2, Email from Dr. Ian Keith to Adrienne Paylor, sent January 27, 2017, at 1:56 pm, ATIP A-2018-00799 at p 94.

<sup>4</sup> Appendix, Tab 3, Email from Dr. Ian Keith to Dr. Zac Waddington et al, sent on July 20, 2017, at 11:19 am, ATIP A-2018-00799 at pp 235

<sup>5</sup> Appendix, Tab 4, Email from Claire Doucette to Michelle Rainer et al., sent on May 14, 2018, at 1:12 pm, ATIP A-2018-00799 at p 615.

*has a plan and implements it, they are in compliance of the COL. For example, if they discover the sea lice and ordered up hydrogen peroxide treatments and a well boat, but it will take 6 months in order to reduce the number of sea lice, they would be compliant. REDACTED The only avenue that I can recommend is that you try to convince Allison REDACTED that the COL needs to be changed for conservation and protection reasons (for wild fish)... C&P staff would be happy to help you develop an enforceable COL".<sup>6</sup>*

***It appears transfer licences are being issued for infected farmed salmon***

The same ATIA materials suggest that one way that fish farms are addressing sea lice treatment resistance is to transfer infected fish to another farm or send infected fish for processing. For example, according to the materials provided, in 2016-2017 Grieg Seafood transferred infected fish from the Nootka Sound region to the Broughton Archipelago (from the Steamer Point farm, where drug resistance was occurring in sea lice, to the Noo-la farm site)<sup>7</sup> and to the Discovery Islands region for processing. This latter transfer was authorized despite strong objections from one of your veterinarians, who responded emphatically that "...the resistant lice should not move from the west to east coast".<sup>8</sup> The veterinarian's warnings were ignored on two counts and this was followed by a confirmation that the sea lice eggs in the fish processing effluent were alive and hatching, resulting in a drug resistant lice pouring into the largest wild salmon migratory corridor in BC.<sup>9</sup>

As you are aware, s. 56 of the *FGRs* permits you to issue a transfer licence for farmed fish only if:

- (a) the release or transfer of the fish would be in keeping with the proper management and control of fisheries;
- (b) the fish do not have any disease or disease agent that may be harmful to the protection and conservation of fish; and
- (c) the release or transfer of the fish will not have an adverse effect on the stock size of fish or the genetic characteristics of fish or fish stocks (underlining added).

Given scientists, including those employed by DFO, have confirmed (i) sea lice are a pathogen,<sup>10</sup> and (ii) sea lice from salmon farms can cause significant harm to juvenile wild salmon,<sup>11</sup> it appears that none of the s.56 conditions could be met with respect to transfers of fish carrying high loads of drug resistant lice.

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<sup>6</sup> Appendix, Tab 5, Email from Neil Jensen to Claire Doucette et al., sent on May 17, 2018, at 9:05 am, ATIP A-2018-00799 at pp 626-627 (underlining added).

<sup>7</sup> Appendix, Tab 2, Email from Dr. Ian Keith to Adrienne Paylor, sent January 27, 2017, at 1:56 pm, ATIP A-2018-00799 at 94.

<sup>8</sup> Appendix, Tab 3, Email from Dr. Ian Keith to Dr. Zac Waddington et al, sent on July 20, 2017, at 11:19 am, ATIP A-2018-00799 at pp 235.

<sup>9</sup> *Ibid.*

<sup>10</sup> See e.g., <https://www.ncbi.nlm.nih.gov/pubmed/15463234>; <http://www.dfo-mpo.gc.ca/aquaculture/rp-pr/acrdp-pcrda/projects-projets/15-1-M-01-eng.html>.

<sup>11</sup> See e.g., <http://www.dfo-mpo.gc.ca/aquaculture/publications/infographics-infographie/lice-pou-eng.html>

## Summary

██████████ is concerned that the COLs issued to salmon farming companies are grossly inadequate to protect wild salmon. With climate change already exacerbating sea louse reproduction on farm salmon through increased water temperatures and salinity, it is more pertinent than ever that you equip your officials with robust and enforceable regulatory tools to protect wild salmon. In fact, if Cermaq is accurate with its sea lice counts in the Broughton Archipelago and has captured lice levels on the poor performers in their farms, then the evidence strongly suggests you will have to lower allowable lice limits on farm salmon to maintain wild salmon populations that migrate past salmon farms.

Two immediate tools at your disposal to address this issue appear to be (i) amending the fish farm COLs to provide your officials with greater enforcement powers,<sup>12</sup> and (ii) complying with the transfer provisions of the *FGRs*, which *two* Federal Court judgments have now confirmed requires conformity with the precautionary principle.<sup>13</sup>

In sum, we request that you answer the two specific questions set out above and more generally explain how the COLs and s.56 of the *FGRs* are being used to ensure BC's wild salmon stocks – which are increasingly recommended for listing under COSEWIC as threatened and endangered – are being protected from sea lice infection on farms.

Respectfully,



Barrister & Solicitor



Barrister & Solicitor

s.19(1)

cc. Andrew Thomson, DFO Regional Director, [Andrew.Thomson@dfo.mpo.gc.ca](mailto:Andrew.Thomson@dfo.mpo.gc.ca)  
Allison Webb, DFO Director, Aquaculture Management, [Allison.Webb@dfo.mpo.gc.ca](mailto:Allison.Webb@dfo.mpo.gc.ca)  
Dr. Zac Waddington, DFO Lead Veterinarian, [Zac.Waddington@dfo-mpo.gc.ca](mailto:Zac.Waddington@dfo-mpo.gc.ca)  
Dr. Ian Keith, DFO Field Operations Veterinarian, [Ian.Keith@dfo-mpo.gc.ca](mailto:Ian.Keith@dfo-mpo.gc.ca)  
Neil Jensen, DFO Senior Compliance Officer, [Neil.Jensen@dfo.mpo.gc.ca](mailto:Neil.Jensen@dfo.mpo.gc.ca)

<sup>12</sup> Section 22(2) of the *Fishery (General) Regulations* empowers you to amend the conditions of a licence “for the purposes of the conservation and protection of fish”.

<sup>13</sup> *Morton v Canada (Fisheries and Oceans)*, 2015 FC 575; *Morton v Canada (Fisheries and Oceans)*, 2019 FC 143.

## **Appendix**

**Tab 1** – Email from Dr. Ian Keith to unknown, sent on May 11, 2018, at 4:02 pm, ATIP A-2018-00799 at pp 235-236

**Tab 2** – Email from Dr. Ian Keith to Adrienne Paylor, sent January 27, 2017, at 1:56 pm, ATIP A-2018-00799 at p 94

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**Tab 5** – Email from Neil Jensen to Claire Doucette et al., sent on May 17, 2018, at 9:05 am, ATIP A-2018-00799 at pp 626-627

**Minister / Ministre (DFO/MPO)**

---

**From:** [REDACTED]  
**Sent:** May-13-19 7:00 PM  
**To:** Minister / Ministre (DFO/MPO)  
**Cc:** Andrew.Thomson@dfo.mpo.gc.ca; Webb, Allison; Waddington, Zac; Keith, Ian; Jensen, Neil; [REDACTED]  
**Subject:** Ltr from Ecojustice to Minister Wilkinson - re sea lice on BC salmon farms  
**Attachments:** 2019 05 13 - Ltr from Ecojustice to Minister Wilkinson - re sea lice on ....pdf

Dear Minister Wilkinson,

Please find attached a letter of today's date drafted on behalf of [REDACTED] regarding the Department of Fisheries and Oceans ("DFOs") efforts to address excessive sea lice infection on BC-based salmon farms.

In short, through the *Access to Information Act* ("ATIA") [REDACTED] has obtained communications between DFO officials that confirm the Conditions of Licence for farms are ineffectual in addressing excessive sea lice infection on farms. The communications also suggest infected farmed Atlantic salmon are being transferred from one region to another, likely without consideration of the potential impact on the wild salmon populations migrating past receiving farms.

We look forward to receiving your (or a DFO representative's) response to the questions set out in the letter.

Sincerely,

s.19(1)

[REDACTED]  
Barrister & Solicitor | Ecojustice  
390 - 425 Carrall Street, Vancouver, BC V6B 6E3  
T: 604-685-5618 | 1-800-926-7744 ext. [REDACTED]  
C: [REDACTED]  
F: 604-685-7813  
[REDACTED]

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## **TAB 1**

**No information has been removed or severed from this page**



Document Released Under the Access to Information Act / Document divulgué en vertu de la Loi sur l'accès à l'information

**Cc:** Waddington, Zac  
**Subject:** Re: Clayoquot lice management

Thanks Ian. I will make sure everyone is informed and start on a response no day. [REDACTED]

[REDACTED]

[REDACTED]

## CERMAQ

Phone +1 250-286-0022  
Direct +1 250-286-0022 ext [REDACTED]  
Mobile [REDACTED]

Cermaq Canada Ltd.  
203 - 919 Island Hwy  
V9W 2C2 Campbell River, BC, Canada

[Cermaq.ca](http://Cermaq.ca)   [Facebook](#)   [Twitter](#)

On May 11, 2018, at 4:02 PM, Keith, Ian <[lan.Keith@dfo-mpo.gc.ca](mailto:lan.Keith@dfo-mpo.gc.ca)> wrote:

Hi [REDACTED]

DFO veterinarians have been monitoring the management of lice in Clayoquot, and have been in discussions with fish health and veterinary staff at Cermaq regarding plans for lice management since Fall 2017. These plans changed throughout early 2018, from 1) a January 11 plan to SLICE treat one farm pending favourable bioassay, and immediate harvest in anticipation of the outmigration period for those 3 farms where SLICE treatment was contraindicated ; to 2) a April 30 plan to peroxide-treat farms where there was exceedance during the outmigration period where SLICE treatment is contraindicated, and manage by harvest at the others. Note that the DFO response January 12 to the January 11 plan stated that when using harvest as a management tool in advance of the outmigration period, that harvesting would have to be finished by the end of February.

Millar is the only farm that has been harvested-out, to date, and none of Ross, Dixon, Mussel and Saranac, where the lice management plan is harvest, have met the required outcome of reduction in "absolute sea lice inventory" (as per licence condition 6.4(a)), based on lice data currently available to us (using average month inventory x average abundance).

While we appreciate the challenges, including delays in acquiring a Pesticide Use Permit for peroxide, we require further explanation and evidence that indicate to DFO what options have been pursued and exhausted by Cermaq that justify the current state of lice burden on numerous farms in Clayoquot.

Specifically:

- Area-based SLICE treatment in late September to early October at numerous sites in Clayoquot had reduced efficacy and duration of effect than what is expected. Please demonstrate how appropriate therapeutic SLICE use was ensured as per Merck's Slice Sustainability Project.
- How were other treatment measures considered such as increased processing capacity at other facilities, use of Marine Harvest Canada's Hydrolicer, an earlier start to harvest at affected farms, and any other options considered?
- What, if any, monitoring of smolt lice burden has Cermaq conducted to monitor for effects on wild salmon smolts?

s.19(1)

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**Please provide any information and/or documents to address the questions or that will assist in our assessment of compliance regarding this issue. I look forward to hearing from you by May 18, 2018. If you have any questions or required further clarification please do not hesitate to contact Zac Waddington at 250-703-0902 or Ian Keith at 250-703-0917.**

**Thanks for your attention concerning this issue.**

**Regards,  
Ian**

**Dr. Ian Keith DVM  
Field Operations Veterinarian – Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
Aquaculture Management Division | Gestion de l'aquaculture  
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**s.16(2)(c)**

## **TAB 2**

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**Keith, Ian**

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**From:** Keith, Ian  
**Sent:** January-27-17 1:56 PM  
**To:** Paylor, Adrienne  
**Subject:** FW: Esperanza  
**Attachments:** Esperanza Inlet Jan2017.doc

This letter is in the style suggested by Sonja, although hers, [REDACTED]  
[REDACTED] would read better.

The two pieces that I might include in a letter:  
to soften the blow of their reality:

- DFO would meet with MOE, government to government, to ask that hydrogen peroxide be classified as a Schedule II pest control product because of how environmentally benign it is. This can be justified [REDACTED] (Schedule II pest control products do not require permits and without pesticide use permits there can be some confidence that purchasing barges and equipment will not have risk of not being able to use the equipment. )

To remind them of the seriousness of the situation:

- It has come to my attention that fish originating at Steamer Point were transferred to Noo-la in April, that Noo-la abundance reached threshold 25 January, 2017 and that Grieg Seafood will be performing SLICE bioassays on the sea lice from Noo-la imminently. We would be interested in the results of that bioassay, and feel that veterinarians from the three companies meet to discuss the results.

Dr. Ian Keith DVM  
Field Operations Veterinarian - Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
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Fax | Télécopieur: 250-703-0921  
[Ian.Keith@dfo-mpo.gc.ca](mailto:Ian.Keith@dfo-mpo.gc.ca)

**From:** Keith, Ian  
**Sent:** Friday, January 27, 2017 1:30 PM  
**To:** Paylor, Adrienne  
**Subject:** FW: Esperanza

Please note that I just got off the phone [REDACTED] and told him I would call him at the office after your meeting with Karen so that he could gain a few days on harvest i.e. harvest barge, crews, plant readiness..

Dr. Ian Keith DVM  
Field Operations Veterinarian - Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
Aquaculture Management Division | Gestion de l'aquaculture  
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s.14  
s.16(2)(c)  
s.19(1)  
s.21(1)(b)

Mobile | Portable: [REDACTED]  
Fax | Télécopieur: 250-703-0921  
[Ian.Keith@dfo-mpo.gc.ca](mailto:Ian.Keith@dfo-mpo.gc.ca)

**From:** Keith, Ian  
**Sent:** Friday, January 27, 2017 1:28 PM  
**To:** Paylor, Adrienne  
**Subject:** Esperanza

As per our conversation this morning

Dr. Ian Keith DVM  
Field Operations Veterinarian - Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
Aquaculture Management Division | Gestion de l'aquaculture  
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s.16(2)(c)

## **TAB 3**

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## **Manchester, Howie**

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**From:** Paylor, Adrienne  
**Sent:** July-20-17 3:27 PM  
**To:** Keith, Ian; Waddington, Zac; Manchester, Howie  
**Subject:** RE: DFO Esperanza lice collection

It is my understanding that the province regulates discharge from processing plants so I'm not sure what our C&P would be able to offer here. Is there something in our CoL that allows us to charge someone for Slice resistant lice? I see that moving the lice to other areas is a concern if they are not already being moved there by/on wild fish? Bernie is coordinating the working group looking at how we can strengthen and clarify our COL around sea lice so perhaps we should bring this issue up there for discussion at our next meeting. [REDACTED]

Adrienne

---

**From:** Keith, Ian  
**Sent:** Thursday, July 20, 2017 11:19 AM  
**To:** Waddington, Zac; Manchester, Howie  
**Cc:** Paylor, Adrienne  
**Subject:** RE: DFO Esperanza lice collection

I have to focus on finishing Report E but if you are willing to pursue this Zac, we think this is important. The Marine Harvest processing plant in Port Hardy has effluent clarification and disinfection and CFIA knows this but to my understanding CFIA has not set standards for plants for dealing with effluent.

It is protocol and respectful to first talk with Joe, the C&P lead in Campbell River; I haven't done more than meeting Joe but I would call his predecessor and he would assign an officer, once informed of the situation. Mike Ballard would be the one I would want to consult, if okay with Joe. If able to speak with him - he isn't working Finfish at the moment and is on assignment in Prince George - he is the one I have worked with in the past so know that he knows the detail of the HMP and licence conditions. (I haven't worked any cases up with others in C&P.)

Howie suggested checking for viability of lice and egg strings from lice on the fish on the processing line, and with this approach we might be able to sample through Grieg, not requiring C&P. However, [REDACTED] CAHS, sampled from the effluent pipe from a plant and found that the lice were viable, and she hatched eggs and followed these through the napuli stages. The advantage of her approach is that eggs from any point in the process would be captured. The disadvantage is that since Browns Bay plant may already have processed some wild salmon, and the argument could be made that eggs came from other sources. If there were viable lice on the line, and viable lice in the discharge, then all we would have to demonstrate is 48 or 72 hour viability, whatever is the standard used for bioassay viability. It would also be possible to compare sequences for confirmation that lice from fish and lice in the discharge were the same source.

Of course, eggs from the plant are the greater risk, and this is a potential concentrated point source of lice for returning adults. (I assume that Seymour Narrows is too fast for juveniles but I don't know this.) Regardless, the resistant lice should not move from west coast to east coast but demonstrating viability of eggs means hatching and Simon Jones is busy right now. However, Shannon Balfry at the West Vancouver DFO lab is currently hatching lice in her system, so is a potential resource for us. CAHS doesn't have an aquarium like Nanaimo or West Van, so relies on changes of water and airstones, the same as we in Courtenay would do. (Maria has done this sort of thing at Atlantic Vet College, but we would want to farm out the work if possible.)

In the discharge would be lice and or eggs from any source associated with the process, from the ice slurry in the hold of the harvest vessel, or 1 tonne Xactics totes on the flat bed, the washings after from those empty holds, or the washing from the plant floors.

When Grieg changed processing plants without changing this in their licence, their SOPs would change so we can't be sure how the harvest vessel is dealing with the hold water from Esperanza Inlet when transferring the harvested fish

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into totes at Muchalat Channel. I have raised the detail that the changing of the processing plant may require amendments to the Grieg licences and therefore the opportunity to make changes in Grieg's licence conditions,

Thanks for this.

Ian

Dr. Ian Keith DVM  
Field Operations Veterinarian - Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
Aquaculture Management Division | Gestion de l'aquaculture  
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**From:** Waddington, Zac  
**Sent:** Thursday, July 20, 2017 7:34 AM  
**To:** Manchester, Howie; Keith, Ian  
**Subject:** RE: DFO Esperanza lice collection

I have no issue with you responding Howie. Have we heard anything about collection at Brown's Bay?

Dr. Zac Waddington DVM, B.Env.Sc (Hons)  
Lead Veterinarian - Pacific Region  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Fisheries Management  
Aquaculture Management Division | Gestion de l'aquaculture  
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s.16(2)(c)

s.19(1)

s.21(1)(b)

s.23

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**From:** Manchester, Howie  
**Sent:** July-19-17 5:43 PM  
**To:** Waddington, Zac; Keith, Ian  
**Subject:** FW: DFO Esperanza lice collection

Would either of you like to respond, let me know, I have not problem responding to this email if your ok with me doing so.

Howie

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**From:** [REDACTED]  
**Sent:** Wednesday, July 19, 2017 4:46 PM  
**To:** Manchester, Howie



## **TAB 4**

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**Waddington, Zac**

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**From:** Waddington, Zac  
**Sent:** May-14-18 3:57 PM  
**To:** Rainer, Michelle; Doucette, Claire  
**Subject:** RE: For approval: media lines

Sorry for the delayed response, I was in a conference call for way too long. But I think they look good, and will defer to Claire about the enforcement.

Zac

---

**From:** Rainer, Michelle  
**Sent:** May-14-18 2:36 PM  
**To:** Doucette, Claire  
**Cc:** Waddington, Zac  
**Subject:** Re: For approval: media lines

OK I understand now. Will do, thanks

Sent from my BlackBerry 10 smartphone on the Rogers network.

---

**From:** Doucette, Claire  
**Sent:** Monday, May 14, 2018 2:32 PM  
**To:** Rainer, Michelle  
**Subject:** RE: For approval: media lines

Michelle, I am just concerned that if it is a really bad outbreak, the reporter is going to ask well will you charge them, why just a letter? We can't and that will take us down another rabbit hole. By stating the following,

.....however, if there has been noncompliance with the license conditions, DFO will address the matter with an appropriate enforcement response.

I believe this is cleaner.

Claire

**From:** Rainer, Michelle  
**Sent:** Monday, May 14, 2018 2:26 PM  
**To:** Doucette, Claire <Claire.Doucette@dfo-mpo.gc.ca>  
**Cc:** Waddington, Zac <Zac.Waddington@dfo-mpo.gc.ca>  
**Subject:** Re: For approval: media lines

OK thanks. Ok if I just say we would issue the letter?

Sent from my BlackBerry 10 smartphone on the Rogers network.

---

**From:** Doucette, Claire  
**Sent:** Monday, May 14, 2018 1:44 PM  
**To:** Rainer, Michelle  
**Subject:** RE: For approval: media lines

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Michelle, my only issue with that response is that it may lead the reporter to ask if we would charge if the issue is bad enough and until the COL's are changed we can never charge. Looks bad for us.

**From:** Rainer, Michelle  
**Sent:** Monday, May 14, 2018 1:19 PM  
**To:** Doucette, Claire <Claire.Doucette@dfo-mpo.gc.ca>; Carlson, Mike <Mike.Carlson@dfo-mpo.gc.ca>; Waddington, Zac <Zac.Waddington@dfo-mpo.gc.ca>  
**Cc:** Ford, Leanne <Leanne.Ford@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: media lines

Thanks, Claire. I'll just say :

Please note that this is not a formal investigation under the *Fisheries Act* or regulations; however, if there has been non-compliance with licence conditions, DFO will issue a formal letter of non-compliance."

Zac, could I also add something like: "and advise on how compliance can be ensured in future." Or something like that?

---

**From:** Doucette, Claire  
**Sent:** May-14-18 1:12 PM  
**To:** Rainer, Michelle; Carlson, Mike  
**Cc:** Ford, Leanne  
**Subject:** RE: For approval: media lines

Sorry Michelle, I was in transit. I am not sure if saying further enforcement actions is prudent because the way the condition of license is written, the only thing we can do is issue a letter. C+P's hands are tied at this point. As long as the company has a plan, that's all we can enforce and they do have a plan. Perhaps put after ....DFO, will address the matter with an appropriate enforcement response.

Claire

**From:** Rainer, Michelle  
**Sent:** Monday, May 14, 2018 12:59 PM  
**To:** Carlson, Mike <Mike.Carlson@dfo-mpo.gc.ca>  
**Cc:** Doucette, Claire <Claire.Doucette@dfo-mpo.gc.ca>; Ford, Leanne <Leanne.Ford@dfo-mpo.gc.ca>  
**Subject:** For approval: media lines

Hi Mike,  
I'm not sure if Claire is available today and we are under deadline. Can you please review these media lines?  
Thanks,  
Michelle

**Issue:** [REDACTED] CBC [REDACTED] is doing a follow-up story on the elevated sea lice levels at Cermaq farms in Clayoquot. Cermaq Canada is voluntarily withdrawing its ASC certification on its fish until the sea lice is under control.

**Deadline:** May 14, 4 p.m. PST

**Recommendation:** email lines

**Approved by:** Zac Waddington

**Media lines:**

s.19(1)

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- Fisheries and Oceans Canada (DFO) is reviewing Cermaq Canada's sea lice management practices at these farms to determine if relevant licence conditions have been followed appropriately.
- Our fish health veterinarians have requested documentation to determine the appropriateness of treatments undertaken at farms, and to ensure that all other treatment and harvest options were duly considered by Cermaq. Financial considerations would not be recognized as justification for exclusion of otherwise effective lice management options.
- Please note that this is not a formal investigation under the *Fisheries Act* or regulations; however, if there has been non-compliance with licence conditions, DFO will issue a formal letter of non-compliance and consider further enforcement options.

---

**From:** Waddington, Zac  
**Sent:** May-14-18 12:50 PM  
**To:** Rainer, Michelle; Doucette, Claire  
**Subject:** RE: Cermaq sea lice media request

My thoughts. I did edit bullet two a bit as well.

- Fisheries and Oceans Canada (DFO) is reviewing Cermaq Canada's sea lice management practices at these farms to determine if relevant licence conditions have been followed appropriately.
- Our fish health veterinarians have requested documentation to determine the appropriateness of treatments undertaken at farms, and to ensure that all other treatment and harvest options were duly considered by Cermaq. Financial considerations would not be recognized as justification for exclusion of otherwise effective lice management options.
- Please note that this is not a formal investigation under the *Fisheries Act* or regulations; however, based the results of DFO's review, the company may be required to ?????My thoughts would be that "if non-compliance with licence conditions is found to have occurred, then a formal letter of non-compliance will be issued and [REDACTED] will be considered."

Zac

s.19(1)

s.21(1)(b)

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**From:** Rainer, Michelle  
**Sent:** May-14-18 11:56 AM  
**To:** Waddington, Zac; Doucette, Claire  
**Subject:** Cermaq sea lice media request  
**Importance:** High

Hi Zac,  
How is this? Can you fill in the blank at the end outlining any measures/changes that may be required of Cermaq?

Claire, can you please review the wording explaining it's not a formal investigation? This reporter previously receive the version that implied it was.

Thanks,  
Michelle

**Issue:** [REDACTED] CBC ([REDACTED]) is doing a follow-up story on the elevated sea lice levels at Cermaq farms in Clayoquot. Cermaq Canada is voluntarily withdrawing its ASC certification on its fish until the sea lice is under control.

Deadline: May 14, 4 p.m. PST

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Recommendation: email lines

Approved by:

Media lines:

- Fisheries and Oceans Canada (DFO) is reviewing Cermaq Canada's sea lice management practices at these farms to determine if relevant licence conditions have been followed appropriately.
- Our fish health veterinarians have requested records documenting the treatment options Cermaq used or considered and to assess whether therapeutants were used appropriately. Financial considerations would not be recognized as justification for exclusion of otherwise effective lice management options.
- Please note that this is not a formal investigation under the *Fisheries Act* or regulations; however, based the results of DFO's review, the company may be required to ?????

## **TAB 5**

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## **Waddington, Zac**

---

**From:** Waddington, Zac  
**Sent:** May-18-18 9:30 AM  
**To:** Jensen, Neil; Doucette, Claire  
**Cc:** Walde, Kirsty; Knight, Joe; Manore, Chris; Paylor, Adrienne  
**Subject:** RE: Clayoquot sea lice graphs

Thanks very much for looking into this. I was not yet working for DFO in the spring of 2017 with the Esperanza lice issue, but from my understanding, this situation is different, [REDACTED]

[REDACTED] We have graphed the absolute sea lice inventory on farms over threshold, and found that the management plan submitted by Cermaq (harvesting), did not meet the criteria of reducing absolute sea lice inventory in the month of March, and graphs for the month of April are pending. I shared the graphs with Claire and can redistribute if necessary (or you can also just speak to Krista S. directly).

All that said, I recognize and agree that our COL are very weak in many areas, and would support opening the licence to change and strengthen our conditions to make them enforceable. In the interim, I was just hoping that this situation in Clayoquot could be reviewed [REDACTED] Unlike the previous situation in Esperanza, here we have documentation demonstrating the failure of their plan to reduce absolute sea lice inventory as per a condition of licence.

Zac

---

**From:** Jensen, Neil  
**Sent:** May-17-18 9:05 AM  
**To:** Doucette, Claire; Waddington, Zac  
**Cc:** Walde, Kirsty; Knight, Joe; Manore, Chris  
**Subject:** RE: Clayoquot sea lice graphs

Hi Claire and Zac,

C&P staff looked at this COL in the past and recommended a change as it was not viewed as enforceable. As I understand it, despite the recommendation, no changes were made to the COL and the current wording became fixed for the duration of the licence. A major limitation of the multi-year licences is that COLs may not be amended except for "the purposes of the conservation and protection of fish" (Fishery (General) Regulations, sec. 22(2)). This issue came up last year with an issue of large numbers of sea lice at Grieg on the West coast of Vancouver Island and C&P was asked investigate. However, the only thing that the company can be compelled or held legally accountable for is "implementing a plan" – whatever that means. There is no measure or quantifiable action that we can determine happened or not (i.e. within a prescribed time period). As long as the company has a plan and implements it, they are in compliance of the COL. For example, if they discovered the sea lice and ordered up hydrogen peroxide treatments and a well boat, but it will take 6 months to get in place in order to reduce the number of sea lice, they would be compliant.

The only avenue that I can recommend is that you try to convince Allison [REDACTED] that the COL needs to be changed for conservation and protection reasons (for wild fish). They may have considered this last year, but I wasn't involved in

s.21(1)(b)

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any of those discussions if they did occur. If there is agreement that the COL can be amended, C&P staff would be happy to help you develop an enforceable COL.

**Neil Jensen**  
Fishery Officer / Agent des pêches

Senior Compliance Officer / Conservation and Protection / Aquaculture  
Fisheries and Oceans Canada / Government of Canada  
[Neil.Jensen@dfo-mpo.gc.ca](mailto:Neil.Jensen@dfo-mpo.gc.ca) / Tél : 250-754-0386  
2 – 1965 Island Diesel Way, Nanaimo, BC V9S 5W8

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2 – 1965, chemin Island Diesel, Nanaimo, CB V9S 5W8

---

**From:** Doucette, Claire  
**Sent:** May-17-18 7:30 AM  
**To:** Waddington, Zac  
**Cc:** Jensen, Neil; Walde, Kirsty  
**Subject:** FW: Clayoquot sea lice graphs

Zac, I am sorry, I was in meetings for most of yesterday and didn't have a chance to read through this however, as discussed Neil Jensen is well aware of the COL and the issues surrounding sea lice. Neil, Zac is seeking clarification on the issue surrounding our capacity to charge. [REDACTED] Zac has provided below his information. I appreciate shellfish is your bailiwick but you know a lot on the matter. Kirsty, feel free to feed in.

Thank you  
Claire

---

**From:** Waddington, Zac  
**Sent:** Wednesday, May 16, 2018 9:43 PM  
**To:** Doucette, Claire <[Claire.Doucette@dfo-mpo.gc.ca](mailto:Claire.Doucette@dfo-mpo.gc.ca)>  
**Subject:** RE: Clayoquot sea lice graphs

Sorry to bug you again, but I'm curious if you've had a chance to review this and what your thoughts were regarding it?

Zac

---

**From:** Waddington, Zac  
**Sent:** May-14-18 4:15 PM  
**To:** Doucette, Claire  
**Subject:** FW: Clayoquot sea lice graphs

Please see the hyperlink below which has numerous graphs based on industry reported sea lice data. Please focus on the "Total Lice Abundance" tab which demonstrates the absolute sea lice inventory on the various farms. This is calculated by multiplying the mid-month inventory on farm, by an average of the month's sea lice counts; therefore we only get one data point per month. Industry reports their monthly inventory and sea lice numbers for each month, on the month following by the 15<sup>th</sup>. Therefore, our current graphs only have data up until the end of March, but by tomorrow we could update these graphs until the end of April. Based on the lice numbers I've seen, there is no expectation that things have improved, with the exception of Millar Channel which has been harvested out.

s.21(1)(b)



**Delaney, Paula**

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**From:** MacDougall, Lesley  
**Sent:** Wednesday, May 22, 2019 10:53 AM  
**To:** Webb, Allison; Waddington, Zac; Reid, Rebecca  
**Cc:** Lowe, Carmel  
**Subject:** second powerpoint - sea lice research, susceptibility, etc.  
**Attachments:** SL presentation\_LM\_sj.pptx

Hello all;

I've followed up with Simon and based on his input and presentations I've attached a second sea lice summary, which provides more detail regarding studies of species specific impacts and studies on prevalence on wild salmon, in response to some of the Minister's queries yesterday.

Simon also notes that he has not worked on steelhead or rainbow trout in his lab; some lab studies from Norway and eastern Canada indicate rainbow trout are relatively susceptible to Leps, and data from Japanese and Canadian high seas and coastal research indicate infection of steelhead is frequently observed.

Lesley MacDougall

A/Division Manager, Aquatic Diagnostics, Genomics & Technology / Division des diagnostics, la génomique, de la technologie aquatique

Fisheries and Oceans Canada / Pêches et Océans Canada

Pacific Biological Station / Station Biologique du Pacifique

Nanaimo, B.C. V9T 6N7

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Lesley.MacDougall@dfo-mpo.gc.ca

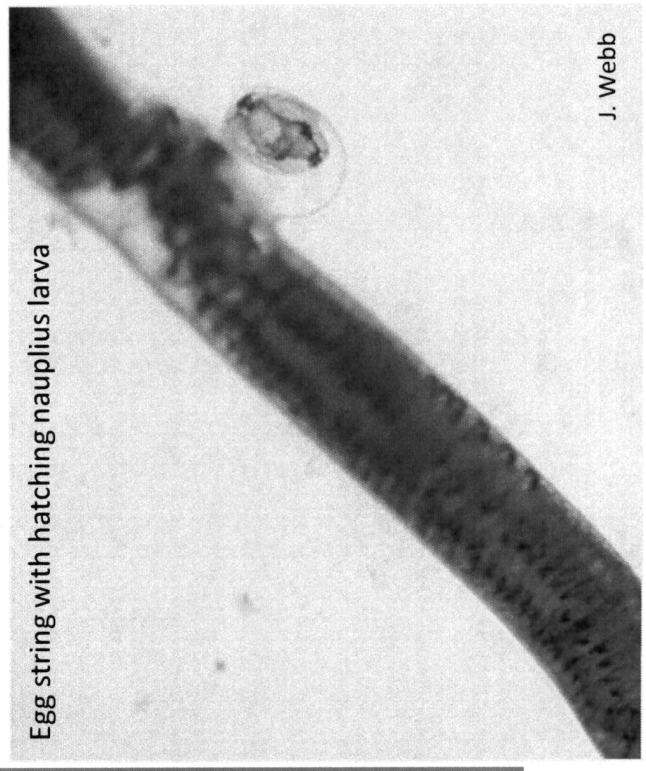
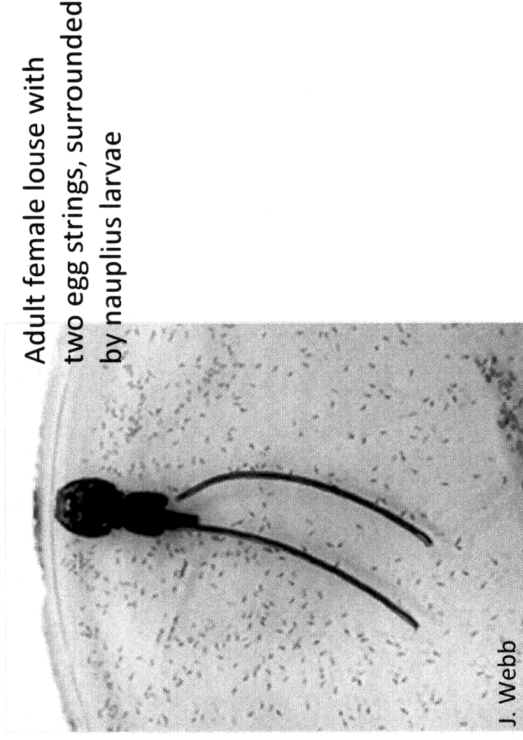
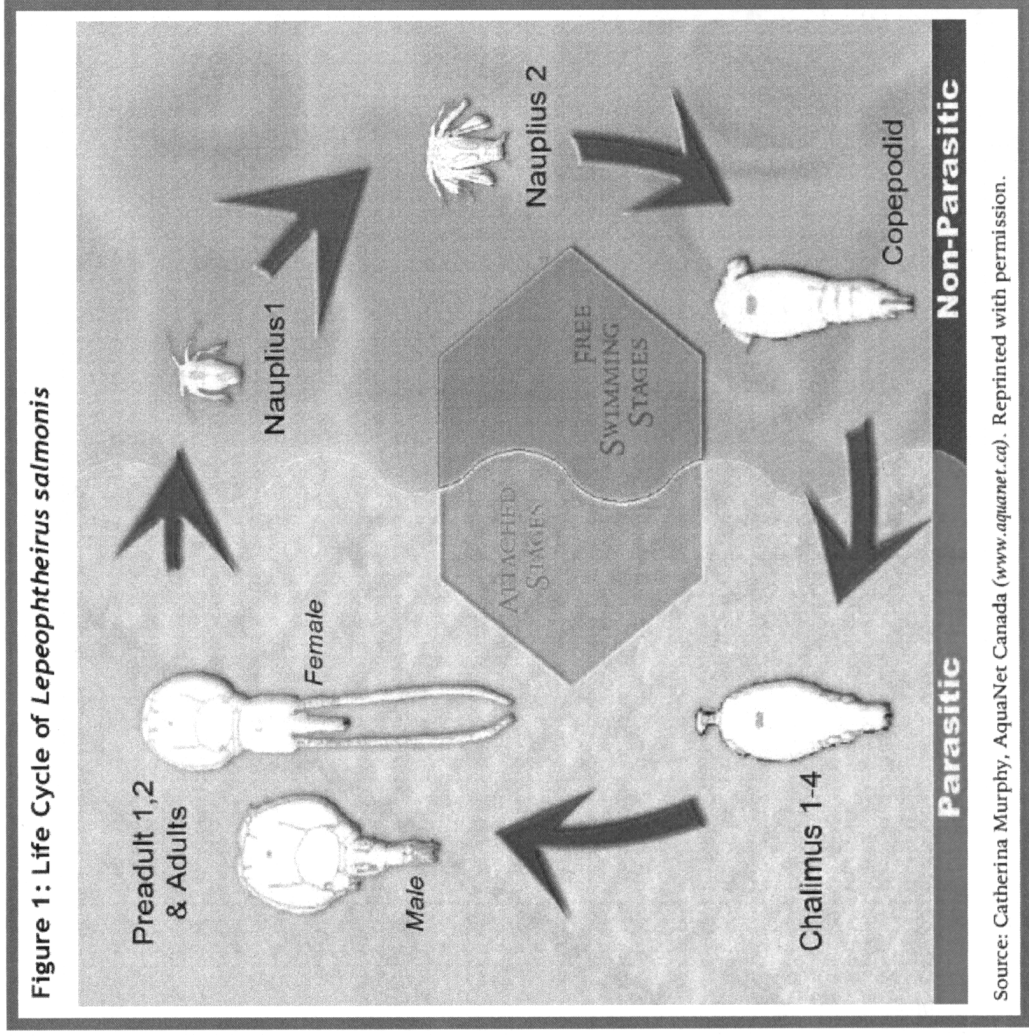
# An overview of sea lice research (*Lepeophtheirus salmonis*) in British Columbia

Simon Jones  
Pacific Biological Station

## Sea lice research in BC

- Laboratory studies
- Infections on wild salmon
- Infections on farmed salmon
- Alternative treatments

# The life cycle of sea lice



# Sea lice are prevalent on adult and sub-adult Pacific Salmon

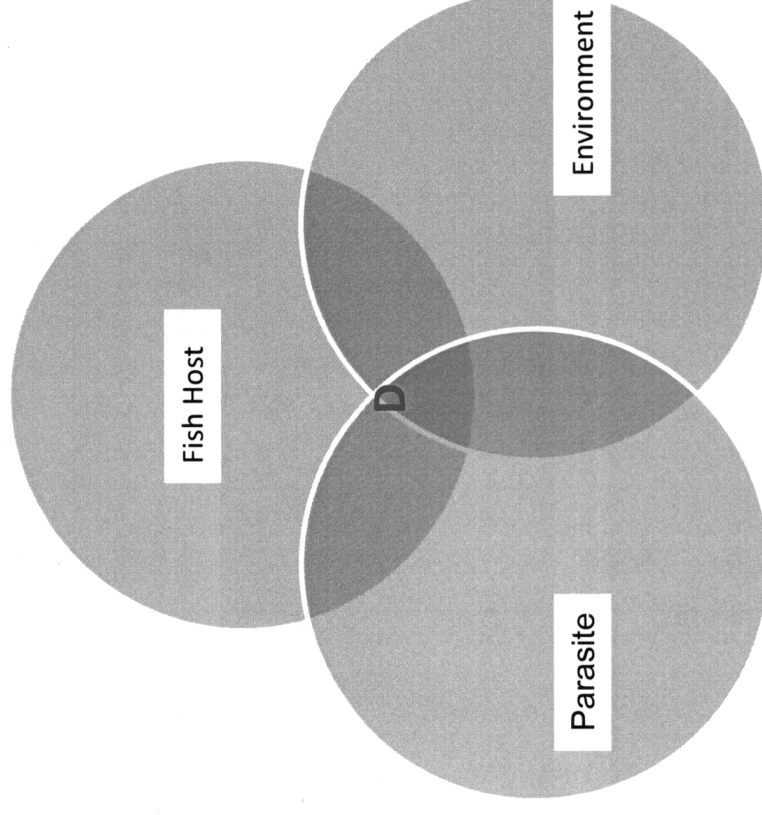
Salmon	Prevalence (n)	Intensity	Reference
Pink	93.8% (1267)	5.92 (1-42)	1
	100% (102)	51.1 (10-162)	2
Chinook	80.6% (103)	5.27 (1-19)	1
	99% (84)	15.9 (1-74)	2
Coho	63.9% (479)	2.42 (1-10)	1
	100% (125)	18.5 (1-105)	2
Chum	36.4% (3491)	2.14 (1-17)	1
	100% (57)	43.7 (2-302)	2
Sockeye	7.8% (451)	1.06 (1-2)	1
	100% (121)	41.1 (9-215)	2

<sup>1</sup>Nagasawa 2001 (high-seas, 5-year avg; Leps)

<sup>2</sup>Beamish et al. 2005 (BC coastal waters, 1-year; Leps + Caligus)

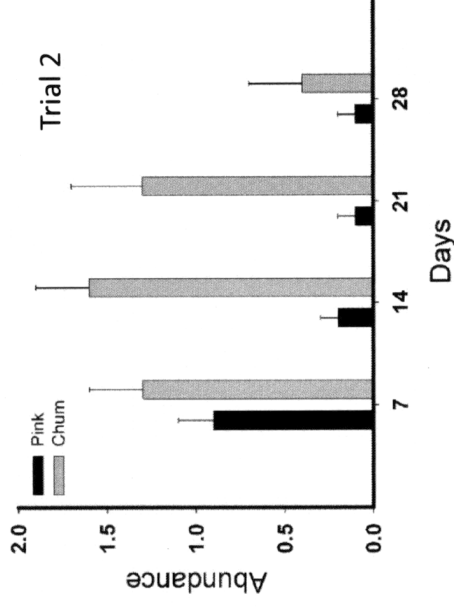
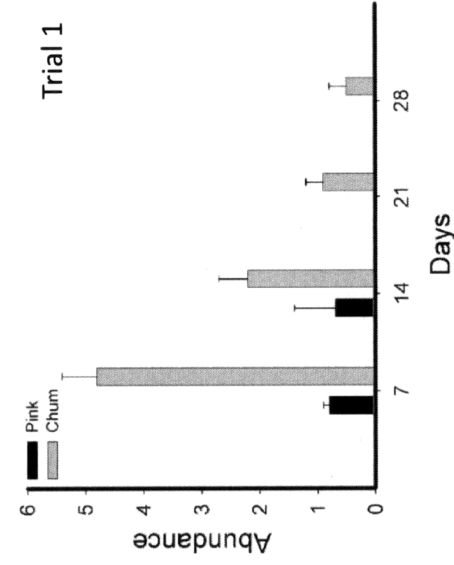
## Host - parasite equilibrium affects disease

- The effect of sea lice on a host is understood in the context of:
  - Host
    - Species, age, susceptibility
  - Parasite
    - Sources (farmed, wild)
    - Distribution, Abundance, Survival
  - Environment
    - Currents, salinity, temperature



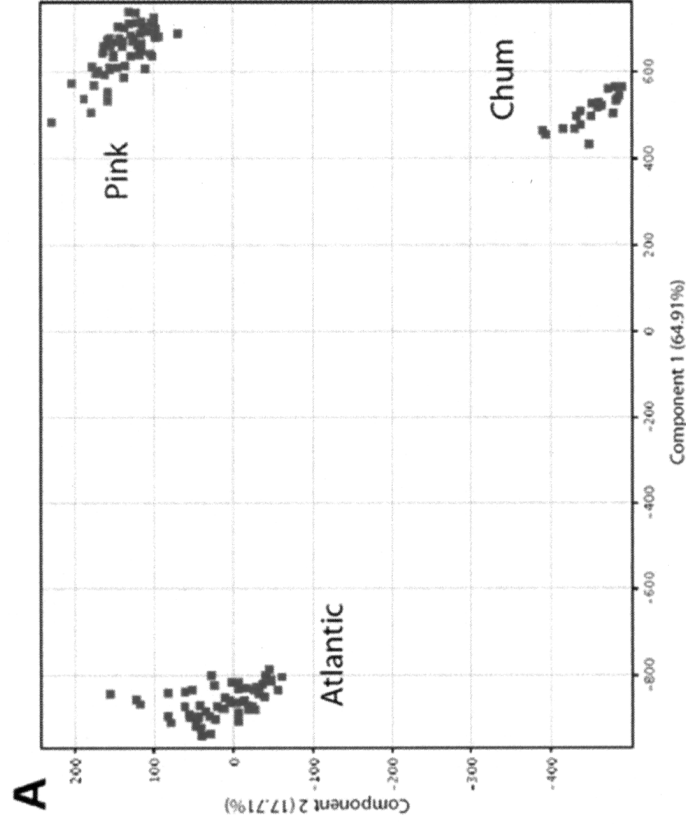
# HOST:

## Laboratory model to explore relative susceptibility to sea lice in juvenile pink and chum salmon

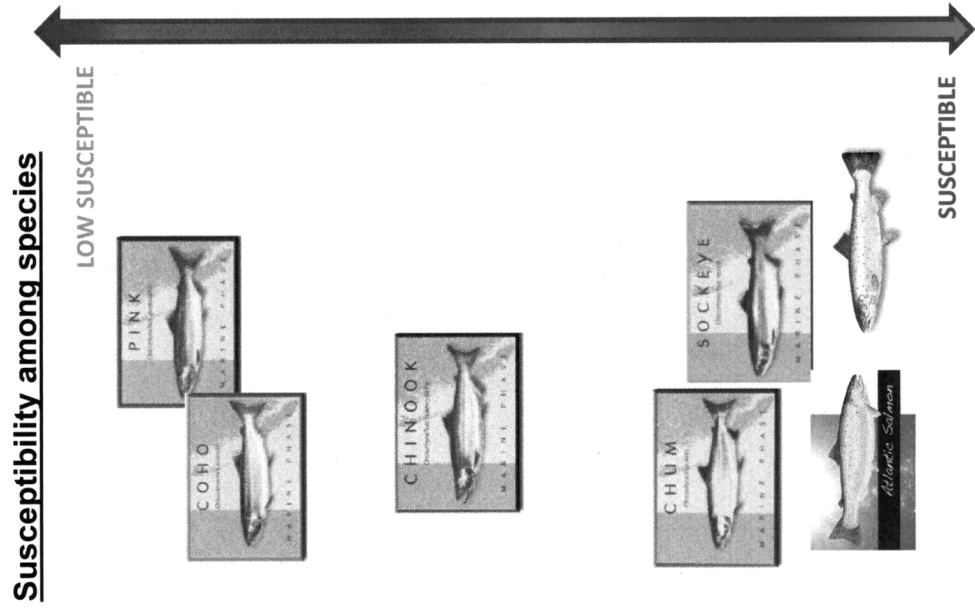


- Past findings for juvenile Pink salmon:
  - Rapid loss of lice from 3g to 20g pink salmon after exposure
  - No mortality
  - Inflammatory response in the skin
- Conclude pink salmon are resistant to the salmon louse
- Chum salmon are more susceptible to the salmon louse

# HOST: Different salmon hosts have very different responses to sea lice



A. Principal components analysis of host transcriptomic response among salmon species.





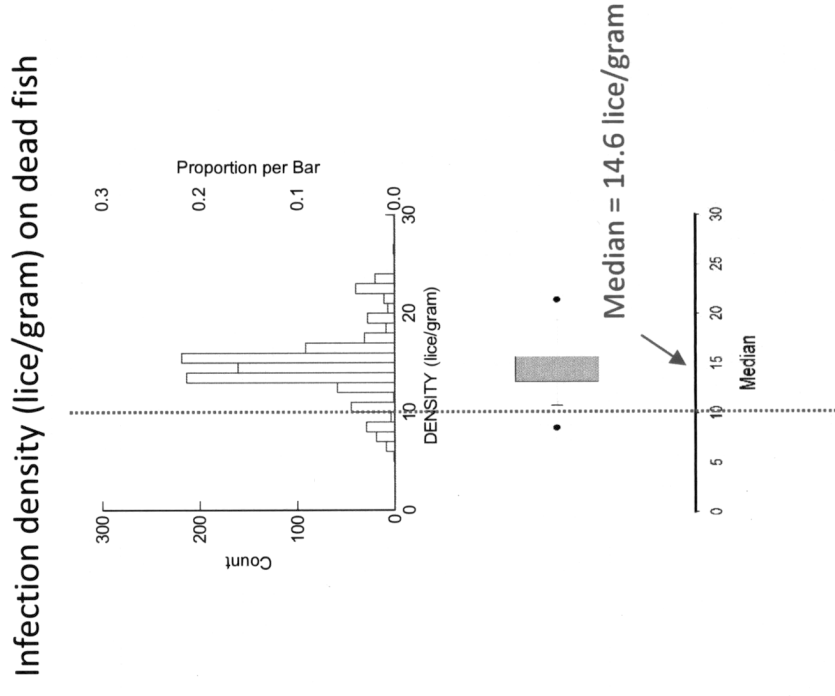
# HOST: Study - effect of size on resistance to lice – also species dependent

- Used high level exposures on very small fish
- 0.3g pink salmon susceptible to sea lice
  - 100% of fish infected
  - 1 to 15 lice/fish
  - 33% mortality
- 0.7g and 2.4g pink salmon resistant to sea lice
- 135g sockeye salmon
  - 55 and 60 lice (0.45 lice/gram)
  - ~25% mortality

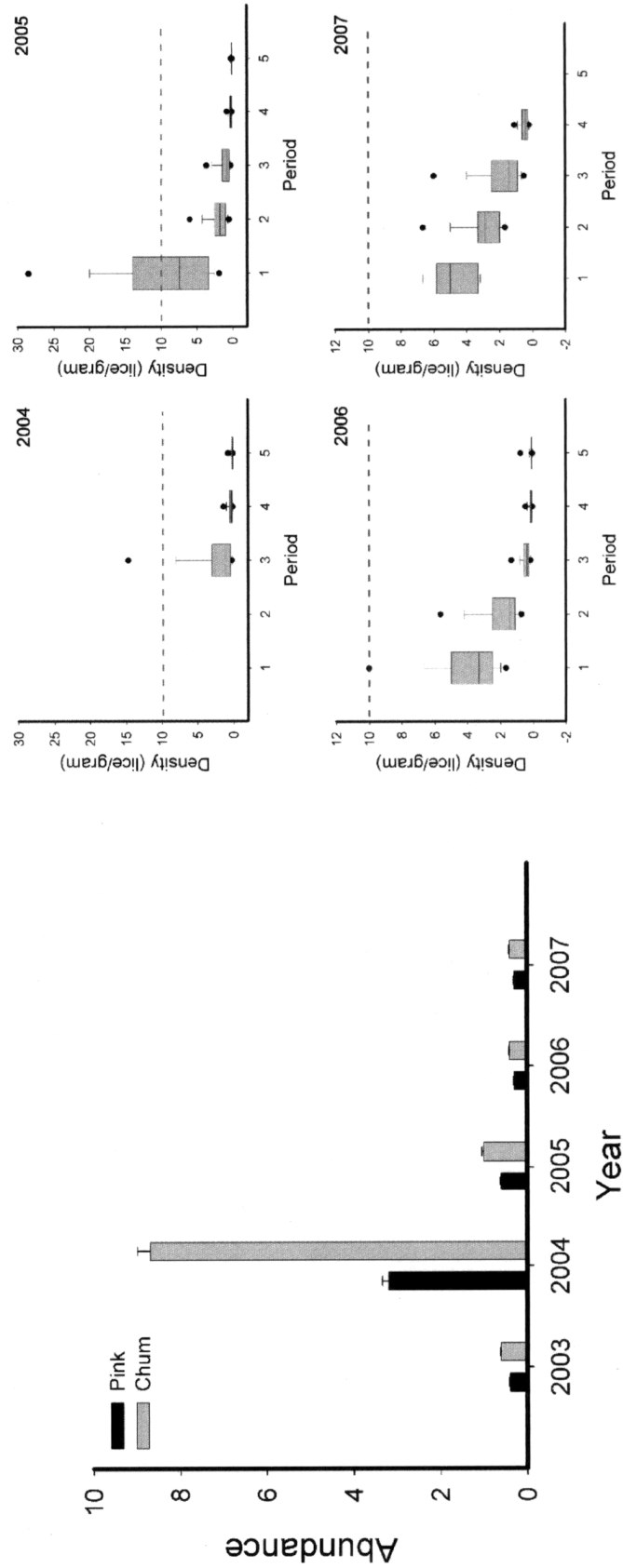
Trial <sup>1</sup>	Stock	Weight	Abundance	% Mortality
1	Quinsam	0.31 ± 0.09	4.3 ± 0.6	33.3
	Glendale	0.25 ± 0.07	4.9 ± 0.6	31.2
2	Quinsam	0.71 ± 0.20	4.1 ± 0.9	5.6
	Glendale	0.69 ± 0.17	3.0 ± 0.5	0
3	Quinsam	2.46 ± 0.65	2.4 ± 0.4	0
	Glendale	2.37 ± 0.39	2.8 ± 0.7	0

# HOST: the number of sea lice required to harm a salmon is dependent on salmon species and size

- STUDY – lethal sea lice numbers on pink salmon:
  - Lab data provides opportunity to better understand natural infections
- Develop lethal infection density threshold as a management tool
- Infections exceeding an estimated threshold of 10 lice/gram will cause mortality in pink salmon juveniles
  - ~1 louse/gram is lethal on Atlantic salmon (Norwegian data)



# How frequently do lethal infections occur on juvenile pink salmon in the Broughton Archipelago?



Period = month: March – July

# Environment:

## Summary of environmental exposure studies

- Sea lice were exposed to environmental stimuli
  - Salmon hosts
  - Salinity gradients
  - Medication (EMB)
  - Microsporidian hyperparasites
- Conditions outside the optimal range for sea lice, for any of the above stimuli, resulted in stress responses from the lice
- These stimuli provide options for control

# Sea lice surveillance of juvenile salmon in BC

- Broughton Archipelago (2003-2012)

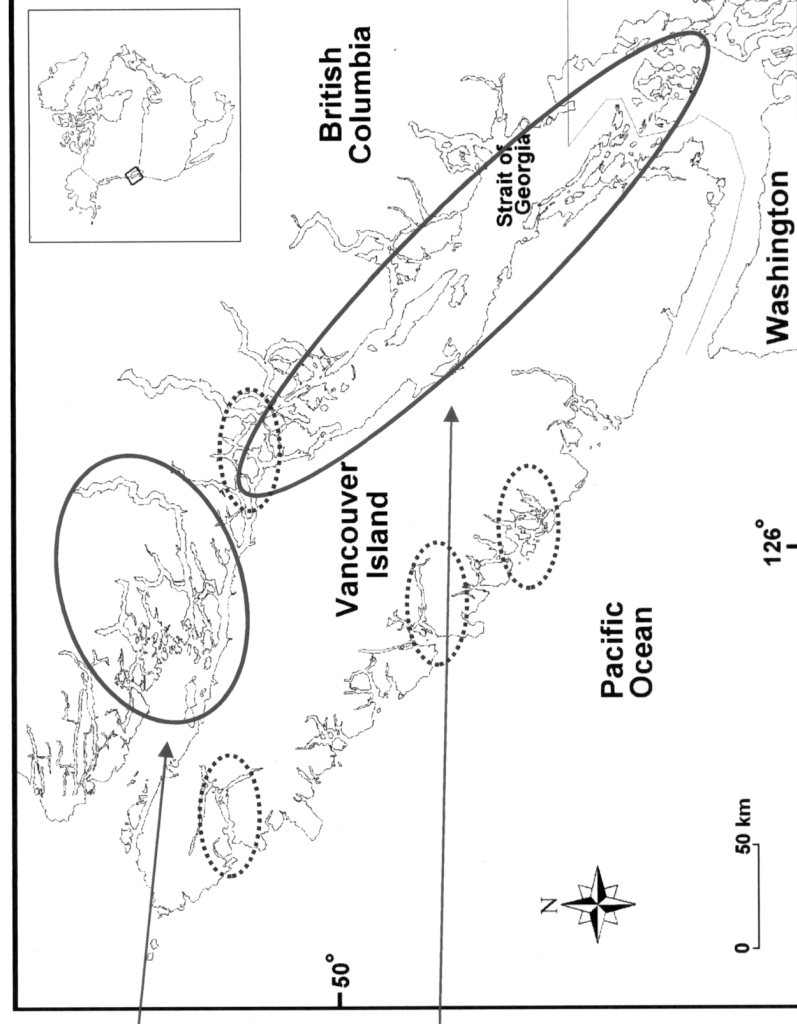
- Pink, chum
- DFO (Jones, Hargreaves)
- Morton, Krkosek, et al.
- 2010-2012: Broughton Archipelago Monitoring Project (DFO, ENGOS, industry, Atlantic Veterinary College)
  - 166,316 wild salmon sampled in the Broughton Archipelago, British Columbia, Canada from 2003 to 2012

- Strait of Georgia (2008-ongoing)

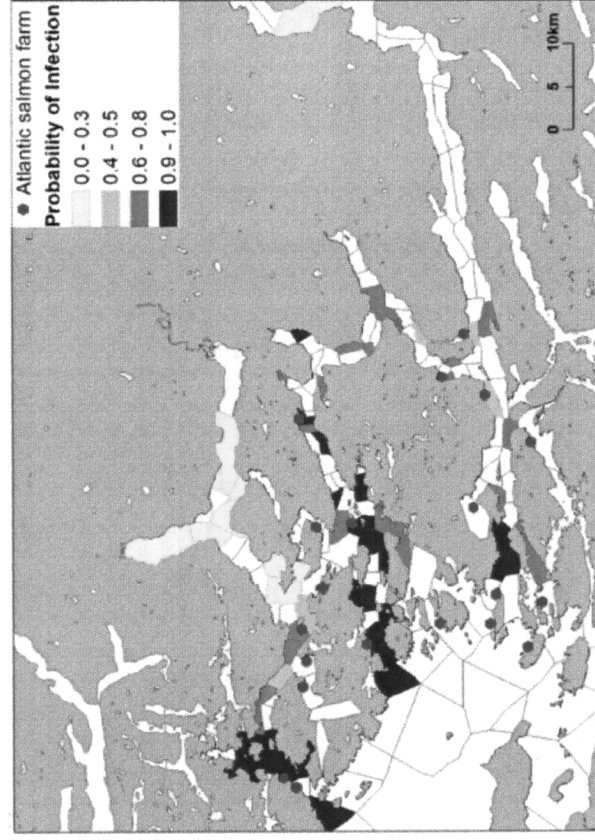
- Various salmon, herring
- DFO (Beamish, Johnson)

- Numerous locations (ongoing)

- Juvenile salmon (industry led monitoring program, as component of certification)



# Broughton Archipelago Monitoring Plan

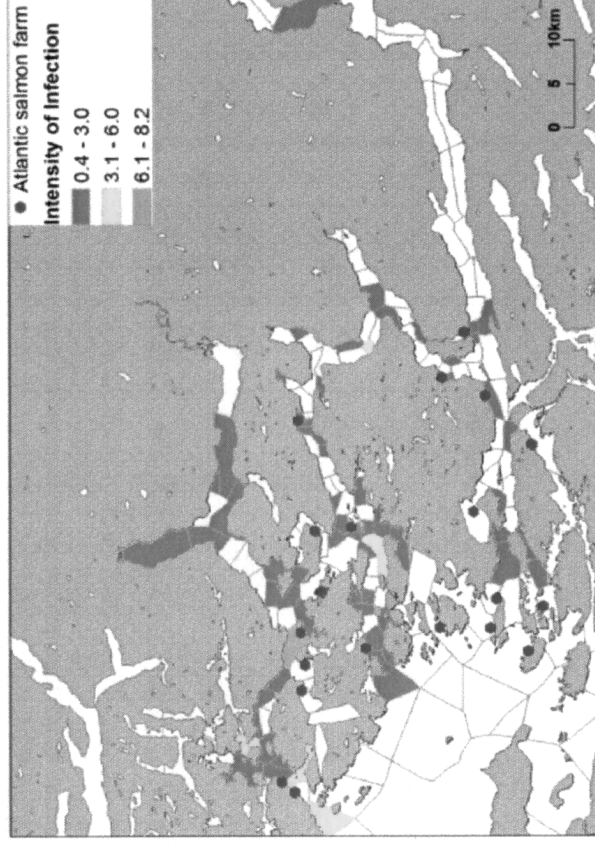


Landscape Ecol  
DOI 10.1007/s10980-015-0188-2

## RESEARCH ARTICLE

### Spatial patterns of sea lice infection among wild and captive salmon in western Canada

E. E. Rees · S. St-Hilaire · S. R. M. Jones · M. Krkošek · S. DeDominicis · M. G. G. Foreman · T. Patanasatienkul · C. W. Revie



Infection was greatest in higher salinity water. Farmed and wild juvenile salmon infection levels were correlated, on average, within 30 km. Except for 2004, sea lice infection on farms were typically well below the regulatory level (3 motiles per fish). Average intensity of non-motile infections observed on the wild fish were 6.36 (SD = 9.98) in 2004 compared to 1.66 (SD = 1.25) for the other years.

# Drivers of motile sea lice (*L. salmonis*) abundance of farmed Atlantic salmon in coastal British Columbia

- Seasonal interactions with wild salmon
- On-farm management
  - Timing, frequency and/or efficacy of treatments
  - Year class
  - Timing of stocking/harvesting
- Oceanographic characteristics
- Other long-term processes?

# Ongoing and future salmon louse research needs in BC

- How best to control sea lice levels on farms during salmon outmigration?
  - Exceedances are about increasing tolerance to medication, about timing, medication dose, availability of other treatment or pest management options
- Understand drivers of changing resistance to EMB medication in Pacific sea lice
  - number of returning wild salmon
  - level of infection on returning wild salmon
  - increased frequency of treatments
  - Collaborate with Industry and academic partners to develop and apply methods for resistance screening
- Non-chemical control
  - Cleaner fish
  - Microsporidian (fungal infection)
- Understanding host recognition by the parasite and host response
- Understand factors influencing regional patterns on infection on farmed salmon



**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Friday, May 24, 2019 9:55 AM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** \*\*REMINDER\*\* Draft\_Reply\_2019-001-01245.docx

**Importance:** High

Hi Allison,

Reminder that we're awaiting your approval.

Thanks  
Candace McGuire, Heather Fowlie & Alison Jacques

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-22-19 5:27 PM  
**To:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Subject:** RE: Draft\_Reply\_2019-001-01245.docx

No as I'd like to check it first. Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Sent:** Wednesday, May 22, 2019 9:20 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** RE: Draft\_Reply\_2019-001-01245.docx

s.21(1)(a)

s.21(1)(b)

s.23

Hi Alison

[REDACTED] Shall we do that now since you're not able to review it yet?  
Candace

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Tuesday, May 21, 2019 10:02 PM  
**To:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Cc:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** RE: Draft\_Reply\_2019-001-01245.docx

Hello - Please note that this is a very technical issue and [REDACTED] I will  
need a few days to respond due to pressing matters related to litigation etc.

Kind regards,

Best available copy

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** May 21, 2019 11:27 AM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** Draft\_Reply\_2019-001-01245.docx

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Your review should also include technical accuracy and consistency with policy direction.

**If you think someone else in Pacific Region** [REDACTED] **must approve and they aren't on our approval list, please advise us ASAP and we will forward the documents for their approval.**

Thanks,  
Heather

**\*\*Please direct all e-mails regarding ministerial correspondence to XPAC PRMCU.\*\***

Candace McGuire, Heather Fowlie and Alison Jacques

Manager, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada/Gouvernement du Canada  
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s.21(1)(a)

s.21(1)(b)

s.23

## **Delaney, Paula**

---

**From:** McCorquodale, Brenda  
**Sent:** Friday, May 24, 2019 2:37 PM  
**To:** Paylor, Adrienne; Webb, Allison  
**Subject:** Sea Lice stuff  
**Attachments:** Amendments to sea lice COLs-BMc.docx

Hi all

At the managers meeting you asked me to pull out what Bernie had been doing on sea lice CoL with Zac. I have attached that along with a short summary piece at the front that notes some of the considerations we could have in reviewing the CoL (some of which just came from other discussions I have been a part of and are not reflected in the new draft CoL attached), and what the process would generally be for changing the CoL. The actual working draft of potential new CoL is at the back.

Hope this is useful.

Brenda

Brenda McCorquodale

Regional Manager, Aquaculture Resource Management  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des pêches  
Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: 250-754-0367

**Page 321**

**is withheld pursuant to sections  
est retenue en vertu des articles**

**21(1)(b), 23, 21(1)(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Pages 322 to / à 324  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**21(1)(b), 21(1)(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 24, 2019 6:26 PM  
**To:** Reid, Rebecca; Thomson, Andrew; Girouard, Louise; Dostal, Alexandra  
**Subject:** Sea lice potential exceedances in Nootka Sound

Hi all – Just FYI my staff just called to let me know that they just returned from field work in Nootka Sound (3 sites operated by Grieg) [REDACTED] The information was being provided to our vet who was reviewing. I'll have more information and keep you posted early next week. Our vet has advised that this year with the warmer temperatures and limited precipitation could cause higher lice levels than other years. We will be watching the situation closely and working to ensure compliance with our regulatory thresholds and COLs.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.21(1)(a)

s.21(1)(b)

Best available copy

**Patirana, Anoma**

---

**From:** Webb, Allison  
**Sent:** May-27-19 12:59 PM  
**To:** Patirana, Anoma  
**Subject:** FW: \*\* REMINDER \*\* FW: Draft\_Reply\_2019-001-01245.docx  
**Attachments:** MECTS-#4052529-v2-Draft\_Reply\_2019-001-01245.docx; 2019-001-01245.pdf

Hey while you're waiting, this is very overdue and I could use your help reviewing what AEO has written as a holding line if you don't mind?

Thanks,  
A

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Sent:** Monday, May 27, 2019 12:12 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** \*\* REMINDER \*\* FW: Draft\_Reply\_2019-001-01245.docx

Hi Allison. Reminder that we are awaiting your response. Can you give us an update, please?  
Thanks  
Candace

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Tuesday, May 21, 2019 11:27 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** Draft\_Reply\_2019-001-01245.docx

s.21(1)(a)  
s.21(1)(b)  
s.23

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Thanks,

Heather

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Candace McGuire, Heather Fowle and Alison Jacques

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Fisheries and Oceans Canada/Government of Canada  
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s.21(1)(a)

s.21(1)(b)

s.23



**Pages 328 to / à 356**

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**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** May-27-19 1:28 PM  
**To:** Webb, Allison  
**Subject:** RE: \*\* REMINDER \*\* FW: Draft\_Reply\_2019-001-01245.docx  
**Attachments:** MECTS-#4052529-v2-Draft\_Reply\_2019-001-01245)\_AP edits.docx

Hey Allison, I've reviewed and made some minor changes. Basically IMO I don't think we need to go into detail about the 2019 Clayoquot or Broughton sea lice situation (Minister already met with [REDACTED] about this) and just say we're looking at a range of options for modernizing sea lice management including reviewing our COL and leave it at that. So I cut out most of AEO's input.  
-Anoma

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** May-27-19 12:59 PM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** FW: \*\* REMINDER \*\* FW: Draft\_Reply\_2019-001-01245.docx

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Thanks  
Candace

s.19(1)

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Best available copy

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Heather

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s.21(1)(b)

s.23

**Pages 359 to / à 360  
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page 272**

Best available copy

Barrister & Solicitor  
Ecojustice

Thank you for your correspondence of May 13, 2019 regarding sea lice in British Columbia.

Fisheries and Oceans Canada (DFO) shares your concern for wild salmon. DFO fish health specialists and veterinarians conduct more than 160 fish health and sea lice audits each year on net pen salmon farms operating in British Columbia's marine environment. Diagnostic services are provided by an accredited animal health laboratory.

In addition, DFO biologists conduct random inspections to monitor compliance with licence conditions. DFO biologists also conduct inspections at freshwater hatcheries where salmon are destined for marine net pens. During these inspections, DFO auditors review documents, practices, biosecurity, and husbandry to monitor compliance with licence conditions.

DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and program and considering options to improve our management of sea lice in BC. We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. During most years, more than 90 percent of sites in British Columbia are below the regulatory thresholds (three motile sea lice per farmed fish) for sea lice during the wild salmon out-migration period from March 1 to June 30 of each year. Sea lice populations are affected by environmental conditions and thrive in warm water temperatures and high salinity levels.

Commented [FH1]: Added by Adrienne Paylor

Prior to issuing a licence to transfer live fish, the Minister must be satisfied that each of the three preconditions outlined in *Fishery (General) Regulations* (FGR) s.56 are met. When considering applications for the movement of fish, an assessment of risk related to FGR s.56(b) and (c) will be conducted on susceptible aggregates of species known to be present in the vicinity of the proposed movement. The health of fish to be moved will be assessed by DFO by reviewing a number of indicators or predictors of population health including: biosecurity at the source facility, mortality at the source facility, vaccination status of the fish to be moved, veterinary oversight, clinical sign(s) of disease in the fish to be moved, health

Commented [FH2]: "a sampling..."?

.../2

s.19(1)

- 2 -

**Best available copy**

history at the source facility and disease or disease agent prevalence in the population to be moved, where available. When a disease or disease agent is detected in a population to be moved, an assessment of the risk that this poses will be conducted. When concerns about drug resistant sea lice exist for an area these fish would not be moved until the risk was mitigated.

This year in the Clayquot area, three Cermaq farms were over threshold entering the outmigration period (March 1). In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction. Two of the three farms in question have since been completely harvested and the third will complete harvesting by the end of May. The remaining Cermaq farms in the Clayquot region have been below acceptable levels during the outmigration period. In 2018, there were exceedances for Cermaq farms in Clayquot Sound and challenges resolving this situation which led to media attention and increased scrutiny. Efforts by DFO staff to work with C&P to lay charges were unsuccessful.

In the Broughton Archipelago, data show that all farms were within the threshold during the 2019 outmigration period. DFO audited 9 farms in the Broughton in April and another two in May which were all below threshold. Sea lice resistance has never been observed to date in the Broughton area. In addition, DFO conducted targeted sea lice audits at Cermaq sites, Burdwood and Sir Edmund Bay on May 7th. Sea lice levels at both sites were below reporting threshold for this quarter. Burdwood's motile lice levels (*Lepeophtherus*) was 0.23 lice/fish while Sir Ed motile lice levels (*Lepeophtherus*) were at 1.5 lice/fish. In addition to three pens sampled at each site, 20 fish per pen, a visual inspection of the fish in all the pens was conducted at both sites and no concerns were noted. From the surface no lice damage was noted. Sea lice records on site were compared with those submitted to DFO for pre SLICE treatment sampling (March-April lice numbers) and no discrepancies were noted between submitted data and on site records.

As challenges have emerged with sea lice management in several areas of the coast, DFO is considering a range of new approaches to manage including:

- changing of conditions of license to improve enforceability
- changing conditions of license to be influenced by area specific out migration periods for juvenile wild salmon
- use of modelling to develop area-based management for lice
- consideration of farm and area level cumulative effects
- continued implementation of new lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- improved public communication through more interactive online tools such as Barents Watch

DFO, the Province of British Columbia, industry, and academics are continuing to research and develop alternative methods to manage sea lice. The rotational use of alternative methods and technologies is part of an integrated pest management approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish.

Best available copy

- 2 -

DFO's Environmental management reports for aquaculture in British Columbia website includes information on the Department's work to manage disease and parasites, reduce disease risks, and treat outbreaks.

The Department is working to ensure that aquaculture practices consider, assess, and mitigate impacts on the environment. We are updating our risk management framework for aquaculture, which will embody a clear understanding of unacceptable harm. The update will embrace precautionary approaches where uncertainty exists and will fully engage the public and Indigenous peoples. DFO ~~will also be~~ has also initiating initiated an economic technology feasibility and status study with respect to alternative technologies including closed containment aquaculture.

DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and program and considering a range of options to improve management of sea lice in BC. This includes a review of licence conditions. We also continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish.

Commented [FH3]: Added by Adrienne Paylor

I believe we can continue to work to encourage greater sustainability in aquaculture, and to support the recovery of wild salmon. Thank you for writing.

Yours sincerely,

Jonathan Wilkinson, P.C., M.P.  
Minister of Fisheries, Oceans and the Canadian Coast Guard

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, May 27, 2019 6:22 PM  
**To:** Rainer, Michelle  
**Cc:** Paylor, Adrienne  
**Subject:** RE: URGENT: new media request on sea lice

Great. Thanks so much.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Monday, May 27, 2019 1:19 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: URGENT: new media request on sea lice

Thanks, Allison. I'll just delete that line.

Will add Sarah's name to list for media training.

Regards,

Michelle

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Monday, May 27, 2019 12:28 PM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Cc:** Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT: new media request on sea lice

Sea lice levels at the remaining 6 farms in the area are below threshold for motiles *L.salmonis* but and increase in *Caligus* (herring lice) lice has been noted. **New**

I find that this is a bit confusing for the public – too nuanced to make the distinction. Also a typo above “an increase” not “and increase”. It also begs a question about what we can do about that.

FYI, my entire team is working full time on Morton/'Namgis so it will be difficult to respond to any other requests today.



Zac is away [REDACTED] and I'm not sure that Sarah has been media trained [REDACTED] By cc of this email, raising to Adrienne that we should get her to undertake the training if you can help with that Michelle. It would be good to make ourselves available in future, but timing today may not be possible due to urgent workload re litigation.

Thanks,

Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Monday, May 27, 2019 12:05 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** URGENT: new media request on sea lice  
**Importance:** High

Hi Allison,

The Minister's office prepared a statement on this last week but as you pointed out it contained some inaccuracies. I have drafted media lines that incorporate the statement with correct information. For your review ASAP.

I've marked what info is new, what came from MinO and what we have previously approved in the region.

Thanks,  
Michelle

**Issue:** [REDACTED] CBC [REDACTED]. I'm working on a story about concerns over sea lice levels being high again at aquaculture sites in Clayoquot sound this spring. Would it be possible to speak with Zachary Waddington about how the situation is being handled?

**Deadline:** May 27, 5 pm PST

s.19(1)

**Approved by:** Adrienne Paylor, Simon Jones

**Media lines:**

- Protecting wild Pacific salmon is a top priority to our government. **Approved in Minister's statement**
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. **Approved in Minister's statement**
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in regulations, legislation and their licence conditions. This is what Canadians expect. **Approved in Minister's statement**

- In March 2019, the Department of Fisheries and Oceans issued a warning letter to Cermaq Canada Ltd. for violation of conditions of licence related to sea lice management that occurred in 2018.
- In preparation for this year's wild salmon outmigration period, which occurs each year from March until the end of June, DFO communicated closely with Cermaq Canada staff to ensure that the company was prepared and managed sea lice levels through treatment, harvest or other appropriate measures. **Approved**
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by the end of May. Motiles are lice in the free-moving stage of their life cycle. **New**
- Sea lice levels at the remaining 6 farms in the area are below threshold for motiles *L.salmonis* but an increase in *Caligus* (herring lice) lice has been noted. **New**
- DFO will perform routine sea lice audits at Clayquot sites during the first week of June to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. **New**
- We will continue to communicate with Cermaq Canada and other companies to ensure that licence requirements are understood and followed. **Approved**
- British Columbians and all Canadians care deeply about the protection of wild Pacific salmon. We do too. That is why we are taking action to ensure that our migrating wild salmon have healthy waters to pass through. Communicating with farm operators and reviewing their management practices is an important part of this approach. **Approved in Minister's statement**
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6). These conditions remain in effect until 2022. **approved**

### Sea lice data collection and analysis

- DFO science in the Pacific region has conducted research on sea lice since 2004, with emphasis on spatial and temporal variations of sea lice infections on juvenile wild salmon in various coastal zones. **approved**
- DFO Science is communicating with Cermaq Canada and other stakeholders to better understand the relationship between sea lice on cultured salmon and on wild juvenile salmon smolts in Clayoquot Sound. At this time, the department has not verified the species or numbers of lice that have recently been reported on juvenile wild salmon smolts in Clayoquot Sound. **new**
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html). **approved**
- The Aquaculture Management Division in Pacific Region also assesses sea lice on wild juvenile salmon and is currently conducting this work in Esperanza Inlet (north of Clayoquot) near active fish farms; results of this work are not yet finalized. **approved**



**Pages 368 to / à 372**  
**are withheld pursuant to section**  
**sont retenues en vertu de l'article**

**23**

**of the Access to Information Act**  
**de la Loi sur l'accès à l'information**

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, May 30, 2019 8:00 AM  
**To:** Campbell, John P.; Thomson, Andrew  
**Cc:** Dostal, Alexandra; Kennedy, Lori; Saumur-Kelly, Maude  
**Subject:** RE: URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture

We could say that we are looking into options to improve management of sea lice including reviewing our conditions of licence. We will be consulting on this.

I don't have approval on this so you may need to wait, but wish to flag for consideration.

Tx,  
A

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Campbell, John P. <[John.Campbell@dfo-mpo.gc.ca](mailto:John.Campbell@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 30, 2019 7:58 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>; Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture

Sorry allison - - can you be more specific given the urgency  
Or we can address later

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 30, 2019 10:55 AM  
**To:** Campbell, John P. <[John.Campbell@dfo-mpo.gc.ca](mailto:John.Campbell@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>; Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture

Hey John – I keep raising this in the other materials for June 3<sup>rd</sup> release b/c the Min is interested in this and it would help us get ahead of other expected issues. I have put some wording in the latest versions of docs for consideration for public consumption. It is focused on revising our COL.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada

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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Campbell, John P. <[John.Campbell@dfo-mpo.gc.ca](mailto:John.Campbell@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 30, 2019 7:36 AM  
**To:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>; Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>  
**Subject:** FW: URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture  
**Importance:** High

Hey folks – can you have a super quick look – we didn't touch sea lice but wondering if there is an update?

It's actually due in a few minutes – sorry !!!!!

Thx

**From:** Campbell, John P.  
**Sent:** Thursday, May 30, 2019 10:24 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Cc:** Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>; Beckford, Ebonie <[Ebonie.Beckford@dfo-mpo.gc.ca](mailto:Ebonie.Beckford@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture

Would suggest the follwing – just on PRV

We have no sea lice updates

**From:** Genier, Sylvie <[Sylvie.Genier@dfo-mpo.gc.ca](mailto:Sylvie.Genier@dfo-mpo.gc.ca)>  
**Sent:** Thursday, May 30, 2019 10:11 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Campbell, John P. <[John.Campbell@dfo-mpo.gc.ca](mailto:John.Campbell@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Cc:** Richter, Julie <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>; Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>; Beckford, Ebonie <[Ebonie.Beckford@dfo-mpo.gc.ca](mailto:Ebonie.Beckford@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>  
**Subject:** URGENT NEED by 10h30 FIRM FW: QP note update - aquaculture  
**Importance:** High

Hi all,

Can you please review this updated QP and advise any concerns by 10h30 today FIRM?  
Merci

**Sylvie Genier**

Executive Assistant / Adjointe exécutive  
Assistant Deputy Minister's Office / Bureau du sous-ministre adjoint  
Aquatic Ecosystems Sector / Secteur des écosystèmes aquatiques  
613-993-2734

**From:** Denis, Joanne <[Joanne.Denis@dfo-mpo.gc.ca](mailto:Joanne.Denis@dfo-mpo.gc.ca)>

**Sent:** May-30-19 10:09 AM

**To:** Richter, Julie <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>; Genier, Sylvie <[Sylvie.Genier@dfo-mpo.gc.ca](mailto:Sylvie.Genier@dfo-mpo.gc.ca)>

**Subject:** QP note update - aquaculture

Hi,

The Minister's office updated the aquaculture note, please advise by 10:40 if you have any concerns.

Merci

Joanne

*Joanne Denis*

Parliamentary Affairs Analyst, Legislation and Parliamentary Affairs

Fisheries and Oceans Canada/ Government of Canada

[joanne.denis@dfo-mpo.gc.ca](mailto:joanne.denis@dfo-mpo.gc.ca) / Tel: 613-996-0552 – Cel: [REDACTED]

Analyste des Affaires parlementaire, affaires législatives et affaires parlementaires

Pêches et Océans Canada/ Gouvernement du Canada

[joanne.denis@dfo-mpo.gc.ca](mailto:joanne.denis@dfo-mpo.gc.ca) / Tél: 613-996-0552 – Cellulaire: [REDACTED]

s.16(2)(c)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 31, 2019 9:00 AM  
**To:** Johansson, Todd  
**Subject:** RE: Sea Lice Artical

Tx for this.


Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Johansson, Todd <Todd.Johansson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 31, 2019 8:54 AM  
**To:** Taekema, Bernie John <BernieJohn.Taekema@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>;  
McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Mollins, Jennifer <Jennifer.Mollins@dfo-mpo.gc.ca>  
**Subject:** Sea Lice Artical

Not sure if folks have seen this but here it is.

<https://alexandramorton.typepad.com/>

Thanks:

Todd Johansson  
Aquaculture Management  
8585 Wollason Street  
Port Hardy BC V0N 2P0  
(w) 250-902-2683  
(c)   
(f) 250-949-6755

s.16(2)(c)



## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 31, 2019 9:00 AM  
**To:** Dostal, Alexandra; Reid, Rebecca; Thomson, Andrew; Girouard, Louise  
**Subject:** FW: Sea Lice Article

FYI

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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<https://alexandramorton.typepad.com/>

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, May 31, 2019 12:51 PM  
**To:** Paylor, Adrienne; Patirana, Anoma  
**Cc:** McCorquodale, Brenda  
**Subject:** Heads up - Sea Lice Plan

Sorry forgot to mention that we'll need to turn something around re sea lice by this eve or weekend too. We have the document that Brenda sent as a starting point. I might need some help on polishing that up for senior management/MINO.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, May 31, 2019 7:54 PM  
**To:** Thomson, Andrew  
**Subject:** RE: Sea Lice regs.

I was really hoping to go to the Four Countries meeting to discuss with my counterparts in Scotland and Norway when I travelled to Norway. Unfortunately they divided up the participation so that Alistair and Alix will be at that meeting and I'm at AquaNor. I'm trying to reach out to my counterparts, but they might not be available during the conference.

I think it would be excellent to have some dialogue with the other countries on this. [REDACTED]

Thanks for sharing,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.21(1)(a)

s.21(1)(b)

**From:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Sent:** Friday, May 31, 2019 7:20 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea Lice regs.

FYI:

Scotland has a new sea lice regulation

<https://www2.gov.scot/resource/0051/00516518.pdf>

Norway has a new reg ( google translated)

Regulations on amendments to the regulations on combating salmon lice

Legal basis: Established by the Ministry of Trade and Industry on 6 March 2017 pursuant to Act 19. December 2003 No. 124 on food production and food safety, etc. (the Food Act) § 7 and § 19, cf. delegation decision December 19, 2003 no. 1790.

IN

In Regulations 5 December 2012 no. 1140 on combating salmon lice in aquaculture plants

The following changes are made:

Section 7 is repealed.

Section 8 shall read:

In Nord-Trøndelag and south, from Monday in week 16 up to and including Sunday in

week 21 at any given time is less than 0.2 adult female lice of salmon lice on average per fish in aquaculture facility. As of Monday in week 22 through Sunday of week 15 it will be for one each time there are fewer than 0.5 adult female lice of salmon lice on average per fish in aquaculture facility.

In Nordland, Troms and Finnmark, as of Monday in week 21 it will even Sunday in week 26 at any given time are less than 0.2 adult female lice of salmon lice on average per fish in the aquaculture plant. From Monday to week 27 until Sunday of week 20 must there are at least fewer than 0.5 adult female lice of salmon lice on average per fish in aquaculture facility.

Measures must be taken to ensure that the amount of salmon lice does not exceed the limits in the first and second paragraphs, including if necessary the removal of fish.

The Norwegian Food Safety Authority can grant permission for a higher limit for salmon lice for brood fish the last time

half the year it is in the sea.

Appendix 1 item number 2 shall read:

2. In Nord-Trøndelag and south, from Monday in week 14 up to and including Sunday in the week 21 salmon lice count on at least 20 random fish from all the cages in the aquaculture plant at each census. From Monday in week 22 through Sunday in week 13, salmon lice must be counted at least 10 random fish from all the cages in the aquaculture plant at each count. The average count in all cages is used when reporting lice

Appendix 1 item number 3 shall read:

3. In Nordland, Troms and Finnmark, from Monday in week 19 up to and including Sunday in week 26 salmon lice count on at least 20 random fish from all cages in the aquaculture plant by each count. From Monday on week 27 through Sunday in week 18, it must be counted salmon lice of at least 10 random fish from all the cages in the aquaculture plant at each count. Sections from counting in all cages are used when reporting lice

Appendix 1 item number 4 shall read:

4. The fish must be caught with a roach or other method that ensures a representative variety of fish. The fish must be stunned before counting. One and one fish is taken up and examined carefully. Lice off in the anesthetic tank will also count

Andrew J L Thomson

Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada

Suite 200 – 401 Burrard St.  
Vancouver, BC, Canada V6C 3S4  
[andrew.thomson@dfo-mpo.gc.ca](mailto:andrew.thomson@dfo-mpo.gc.ca)  
Telephone | Téléphone 604.666.0751  
Facsimile | Télécopieur 250.666.8069  
Government of Canada | Gouvernement du Canada

No information has been removed or severed from this page

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Saturday, June 1, 2019 1:32 PM  
**To:** 'House, Matthew'; Dostal, Alexandra; McPherson, Arran; Parsons, Jay; Campbell, John P.; Haesevoets, Roderick; Medeiros, Dean; Quinn, Caroline; Thomson, Andrew; Krahn, Danielle; Sharzer, Stephen (DOJ); Reid, Rebecca; Hubley, Marian; Morel, Philippe; Sharzer, Stephen (DOJ); Fagan, Ashley; Struthers, Alistair  
**Subject:** RE: DM Request - document update

We're drafting a BN now on sea lice for review and approval. We'll have a draft finished today. If this moves quickly, could also form part of an announcement which rounds out our approaches, but also fits well into the Area Based Management approaches. In this case, waiting could facilitate that being included.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** House, Matthew <Matthew.House@justice.gc.ca>  
**Sent:** Saturday, June 1, 2019 1:26 PM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Haesevoets, Roderick <Roderick.Haesevoets@dfo-mpo.gc.ca>; Medeiros, Dean <Dean.Medeiros@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Krahn, Danielle <Danielle.Krahn@dfo-mpo.gc.ca>; Sharzer, Stephen (DOJ) <stephen.sharzer@justice.gc.ca>; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Hubley, Marian <Marian.Hubley@dfo-mpo.gc.ca>; Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>; Sharzer, Stephen (DOJ) <stephen.sharzer@justice.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Subject:** RE: DM Request - document update

Alix,



Matt

Matthew House  
Avocat | Counsel  
Ministère de la Justice du Canada | Department of Justice Canada  
Services juridiques du MPO | DFO Legal Services  
200 rue Kent, Ottawa, ON, K1A 0E6  
Tel. (613) 998-0273  
Bb. ( )  
[Matthew.House@justice.gc.ca](mailto:Matthew.House@justice.gc.ca)

s.16(2)(c)  
s.21(1)(a)  
s.21(1)(b)  
s.23

This communication and attachment are confidential and may be subject to solicitor-client privilege. It should be read only by the person to whom it is addressed. If you have received this communication in error, please notify us immediately and delete this message without reading, copying or forwarding it to anyone.

**From:** Dostal, Alexandra [<mailto:Alexandra.Dostal@dfo-mpo.gc.ca>]

**Sent:** Saturday, June 01, 2019 2:35 PM

**To:** McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Parsons, Jay <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>; Campbell, John P. <[John.Campbell@dfo-mpo.gc.ca](mailto:John.Campbell@dfo-mpo.gc.ca)>; Haesevoets, Roderick <[Roderick.Haesevoets@dfo-mpo.gc.ca](mailto:Roderick.Haesevoets@dfo-mpo.gc.ca)>; Medeiros, Dean <[Dean.Medeiros@dfo-mpo.gc.ca](mailto:Dean.Medeiros@dfo-mpo.gc.ca)>; Quinn, Caroline <[Caroline.Quinn@dfo-mpo.gc.ca](mailto:Caroline.Quinn@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Krahn, Danielle <[Danielle.Krahn@dfo-mpo.gc.ca](mailto:Danielle.Krahn@dfo-mpo.gc.ca)>; Sharzer, Stephen <[Stephen.Sharzer@justice.gc.ca](mailto:Stephen.Sharzer@justice.gc.ca)>; House, Matthew <[Matthew.House@justice.gc.ca](mailto:Matthew.House@justice.gc.ca)>; Reid, Rebecca <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>; Hubley, Marian <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>; Morel, Philippe <[Philippe.Morel@dfo-mpo.gc.ca](mailto:Philippe.Morel@dfo-mpo.gc.ca)>; Sharzer, Stephen <[Stephen.Sharzer@justice.gc.ca](mailto:Stephen.Sharzer@justice.gc.ca)>; Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>

**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>

**Subject:** DM Request - document update

**Importance:** High

Colleagues,

I am so sorry to bother you, but the DM has made a request below *regarding what documents are being prepared, and when we would release what under various scenarios*

I would appreciate feedback on whether I caught everything and the right timing etc. Comms- I am not sure what the latest is on announcement timing in various scenarios, so any guidance on that that I could add to the table would be appreciated.

Also, for extra certainty – [REDACTED]

Lastly, MINO has asked for an engagement table for pre-announcement, which I think we will need to send shortly (by Monday first thing latest) -Rebecca and Philippe it suggests you for some of the calls if we are announcing the HSMI/Jaundice/Foreign PRV measures. Please let me know if this works.

If I could get comments by 4pm today, I would be so appreciative. **Arran/Philippe/Rebecca/Steve** – please let me know if you would like me to hold this until you have had a chance to review.

Alix

s.21(1)(a)

s.21(1)(b)

Document	For Publication?	Published/Created if Extension?	Timing for next steps
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Minister Info note	No	Yes- although timing if extension could come later in week	Will be adjusted based on outcome of hearing
Context/Chapeau piece	Yes	Yes	Making small edits from Minister briefing
FARM	Yes	Yes	Upon release, 60 days for consultation Making small edits from Minister briefing
s. 56 Decision framework	Yes	Yes	Upon release, 60 days for consultation
s. 56 interpretation guideline	No – although could be shared with 'Namgis in consultation	Yes	
RDG decision note	No	No	TBD after hearing
Tech Tables annex	Note not published, but tech tables to be stood up	Yes – included in announcement	After announcement, work begins to identify membership and stand up groups, for August kick off
Comms materials	Yes – news release and backgrounder published. Also creating: media lines, Qs and As, plus lines if an extension	Yes, if extension, announcement still expected (on same day?) announcing release of items listed above	
Tech study	Yes – would be released later	Yes	Not expected to be ready until at least later in June. Drafts still being discussed by steering committee

## Alix Dostal

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
 Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
 Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
 Government of Canada | Gouvernement du Canada

s.21(1)(a)

s.21(1)(b)



## **Patirana, Anoma**

---

**From:** Webb, Allison  
**Sent:** June-01-19 1:39 PM  
**To:** Patirana, Anoma  
**Subject:** FW: Aqua lines: Sea Lice  
**Attachments:** Sea lice Summary from Fish Health and Sea lice audits - May 31 2019.docx

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Friday, May 31, 2019 3:49 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: Aqua lines: Sea Lice

Audit activity and update from Howie  
Sea lice Summary from Fish Health and Sea lice audits

- 30 DFO sea lice audits have been completed to date in 2019
- Thus far only one of the 30 audits has shown sea lice levels over threshold, this was reported to DFO and this farm has since been harvested out.
- DFO was conducting sea lice audits in the Esperanza/Nootka area last week but due to environmental issues was not able to conduct the scheduled sea lice audits at the esperanza site, these will be re scheduled for June. Records and observation as well as counts from fish being harvested in the Esperanza area (zone 2.4) indicate *L.salmonis* motile lice levels are over threshold during the outmigration period. The company is currently controlling lice levels with harvest and hydrogen peroxide treatments. The DFO veterinarian is in close communications with the industry veterinarian.

---

**From:** Manchester, Howie  
**Sent:** May-31-19 3:44 PM  
**To:** Bate, Dan  
**Cc:** McConnachie, Sarah; Paylor, Adrienne; Patirana, Anoma; Sandberg, Krista  
**Subject:** FW: Aqua lines: Sea Lice

Hi Dan,

Please see my changes below in the yellow highlight. Also see some bullets in the attached file you may want to use.

Howie

---

**From:** Paylor, Adrienne  
**Sent:** May-31-19 3:17 PM  
**To:** Sandberg, Krista; Manchester, Howie; Diamond, Maria  
**Subject:** FW: Aqua lines: Sea Lice

Fyi.....Questions coming in so what ever we know on 2019 sea lice out migration.....

---

**From:** Bate, Dan  
**Sent:** May-31-19 3:13 PM  
**To:** Paylor, Adrienne  
**Cc:** Girouard, Louise; Rainer, Michelle  
**Subject:** Aqua lines: Sea Lice

Hi Adrienne – thanks for the chat just now.  
Here with our existing lines for your input.

Dan

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act. in regulations, legislation and their licence conditions. This is what Canadians expect.
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by the end of May. Motiles are lice in the free-moving stage of their life cycle. Sea lice levels at the remaining 6 farms in the Clayoquot Sound area are below threshold.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted 30 site inspections at farm sites in BC in 2019. Of those inspections, 1 of farms had levels which exceeded thresholds, this farm has been completely harvested.
- British Columbians and all Canadians care deeply about the protection of wild pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.

- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) . These conditions remain in effect until 2022.

**Dan Bate**

Team Lead, Communications

Fisheries and Oceans Canada Pacific Region / Canadian Coast Guard Western Region / Government of Canada

[Dan.Bate@dfo-mpo.gc.ca](mailto:Dan.Bate@dfo-mpo.gc.ca) / Tel: (604) 775-8809 / Cell: [REDACTED]

Chef d'équipe, communications

Pêches et Océans Canada, région du Pacifique / Garde côtière canadienne, région de l'Ouest / Gouvernement du Canada

[Dan.Bate@dfo-mpo.gc.ca](mailto:Dan.Bate@dfo-mpo.gc.ca) / Tél : (604) 775-8809 / Tél. cell. : [REDACTED]

s.16(2)(c)

#### Sea lice Summary from Fish Health and Sea lice audits

- 30 DFO sea lice audits have been completed to date in 2019
- Thus far only one of the 30 audits has shown sea lice levels over threshold, this was reported to DFO and this farm has since been harvested out.
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## Patirana, Anoma

---

**From:** Webb, Allison  
**Sent:** June-01-19 1:40 PM  
**To:** Patirana, Anoma  
**Subject:** FW: Aqua lines: Sea Lice

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Friday, May 31, 2019 5:17 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** FW: Aqua lines: Sea Lice

FYI

---

**From:** Manchester, Howie  
**Sent:** May-31-19 6:55 PM  
**To:** Bate, Dan  
**Cc:** Sandberg, Krista; Paylor, Adrienne  
**Subject:** FW: Aqua lines: Sea Lice

Hi Dan,

Here is some more information on the sea lice situation from submitted records from industry.

Howie

---

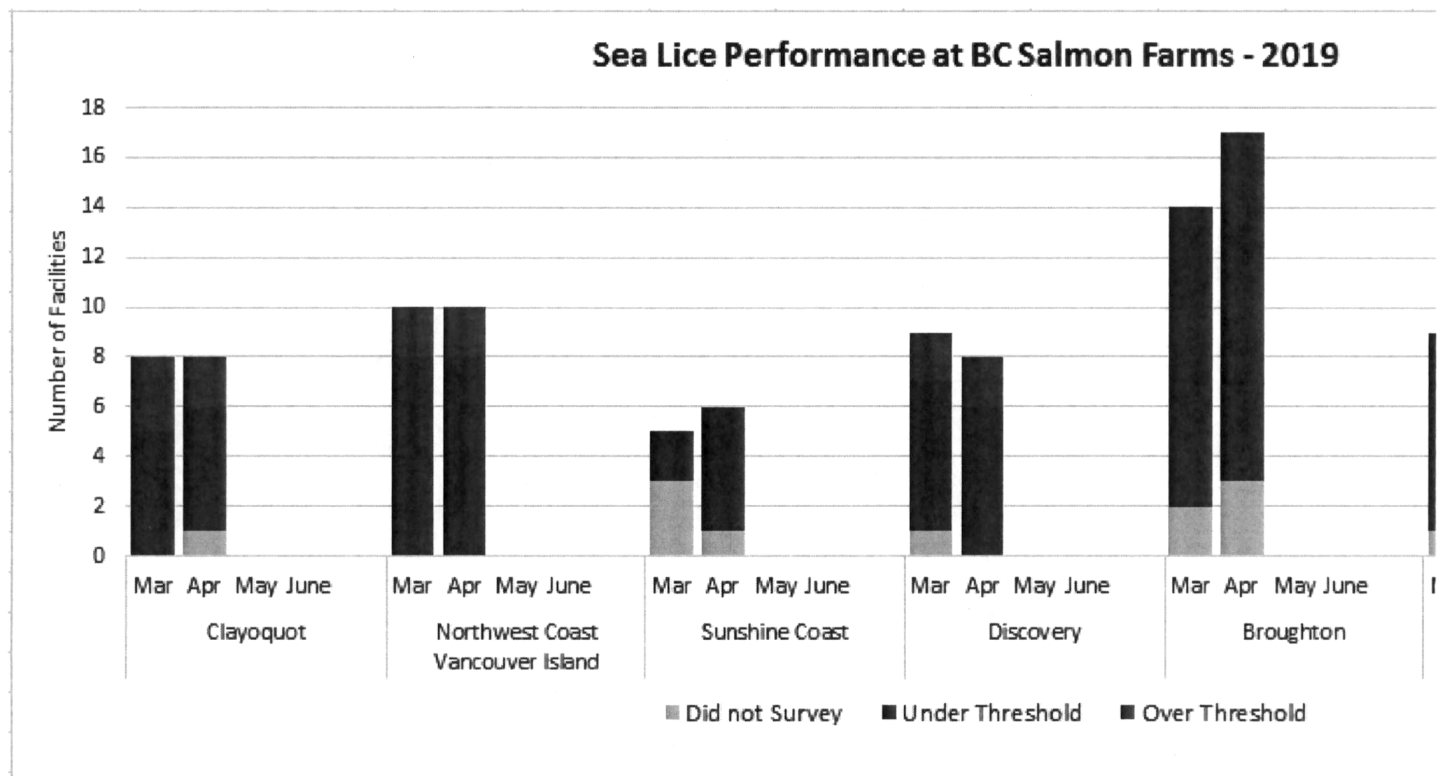
**From:** Sandberg, Krista  
**Sent:** May-31-19 3:49 PM  
**To:** Paylor, Adrienne; Manchester, Howie; Diamond, Maria  
**Subject:** RE: Aqua lines: Sea Lice

I will let Howie/Maria respond to the note about audit data. Howie, you might be able to improve the sentence below about Esperanza as well...

The note below for Clayoquot is correct.

- In 2019, 2 of 10 active sites in the Discovery Passage area were over the 3-motile threshold during the beginning of the outmigration period. One has been treated via mechanical removal (hydrolicer) and in-feed treatment (Slice) and is now below threshold. The other is a small brood facility.
- In 2019, 3 of 3 active sites in the Esperanza Inlet area were over the 3-motile threshold during the beginning of the outmigration period. These farms are being treated with hydrogen peroxide and are actively harvesting.

Here is how things are looking for 2019, I have not yet separated out Zone 2.4 in this graph:



**Krista Sandberg**

Aquaculture Data and Public Reporting Coordinator |  
 Coordonnateur des données sur l'aquaculture et des rapports publics  
 Office | Bureau 250-286-5835  
 Cellular | Cellulaire [REDACTED]



**From:** Paylor, Adrienne  
**Sent:** May-31-19 3:17 PM  
**To:** Sandberg, Krista; Manchester, Howie; Diamond, Maria  
**Subject:** FW: Aqua lines: Sea Lice

Fyi.....Questions coming in so what ever we know on 2019 sea lice out migration.....

**From:** Bate, Dan  
**Sent:** May-31-19 3:13 PM  
**To:** Paylor, Adrienne  
**Cc:** Girouard, Louise; Rainer, Michelle  
**Subject:** Aqua lines: Sea Lice

s.16(2)(c)

Hi Adrienne – thanks for the chat just now.  
 Here with our existing lines for your input.

Dan

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.

- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act, in regulations, legislation and their licence conditions. This is what Canadians expect.
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by the end of May. Motiles are lice in the free-moving stage of their life cycle. Sea lice levels at the remaining 6 farms in the Clayoquot Sound area are below threshold.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted XX site inspections at farm sites in BC. Of those inspections, XX of farms had levels which exceeded thresholds.
- British Columbians and all Canadians care deeply about the protection of wild pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) . These conditions remain in effect until 2022.

**Dan Bate**

s.16(2)(c)

Team Lead, Communications

Fisheries and Oceans Canada Pacific Region / Canadian Coast Guard Western Region / Government of Canada

[Dan.Bate@dfo-mpo.gc.ca](mailto:Dan.Bate@dfo-mpo.gc.ca) / Tel: (604) 775-8809 / Cell: [REDACTED]

Chef d'équipe, communications

Pêches et Océans Canada, région du Pacifique / Garde côtière canadienne, région de l'Ouest / Gouvernement du Canada

[Dan.Bate@dfo-mpo.gc.ca](mailto:Dan.Bate@dfo-mpo.gc.ca) / Tél : (604) 775-8809 / Tél. cell. : [REDACTED]

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Saturday, June 1, 2019 1:42 PM  
**To:** Reid, Rebecca  
**Cc:** Girouard, Louise  
**Subject:** RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

I'm double checking our data now which I have and can provide info shortly. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Sent:** Saturday, June 1, 2019 1:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Subject:** Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

The claim from DNS and [REDACTED] is exploding lice population on wcvi. This line was trying to address the issue

Sent from my Samsung Galaxy smartphone.

----- Original message -----

**From:** "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
**Date:** 2019-06-01 10:38 AM (GMT-08:00)  
**To:** "Reid, Rebecca" <Rebecca.Reid@dfo-mpo.gc.ca>  
**Cc:** "Girouard, Louise" <Louise.Girouard@dfo-mpo.gc.ca>  
**Subject:** Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi - these lines didn't come thru me for review yesterday. I am not clear what this line is trying to say so would suggest deleting. If there is a particular message that we are trying to convey, let me know and i'll draft something. If I can check the lines before they go up - if time - in all cases, I would appreciate too. Be in the office 11ish. Thx

Sent from my BlackBerry 10 smartphone on the Bell network.

-----s.19(1)-----

**From:** Reid, Rebecca  
**Sent:** Saturday, June 1, 2019 8:44 AM  
**To:** Webb, Allison  
**Cc:** Girouard, Louise  
**Subject:** Fwd: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi Allison - can we confirm this one line?



RR

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: "McPherson, Arran" <Arran.McPherson@dfo-mpo.gc.ca>

Date: 2019-06-01 7:23 AM (GMT-08:00)

To: "ComApproval / Approbation (DFO/MPO)" <ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>, "ComApproval / Approbation (DFO/MPO)" <ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>, "Morel, Philippe" <Philippe.Morel@dfo-mpo.gc.ca>

Cc: "Burns, Adam" <Adam.Burns@dfo-mpo.gc.ca>, "Morris, Christina" <Christina.Morris@dfo-mpo.gc.ca>, "Hubley, Marian" <Marian.Hubley@dfo-mpo.gc.ca>, "Quinn, Caroline" <Caroline.Quinn@dfo-mpo.gc.ca>, "Fagan, Ashley" <Ashley.Fagan@dfo-mpo.gc.ca>, "Dostal, Alexandra" <Alexandra.Dostal@dfo-mpo.gc.ca>, "Moore, Wayne" <Wayne.Moore@dfo-mpo.gc.ca>, "Goetze, Darren" <Darren.Goetze@dfo-mpo.gc.ca>, "Northcott, Jennifer" <Jennifer.Northcott@dfo-mpo.gc.ca>, "McGill, Stephanie" <Stephanie.McGill@dfo-mpo.gc.ca>, "Patrick, Lindsey" <Lindsey.Patrick@dfo-mpo.gc.ca>, "Kaleta, Michelle" <Michelle.Kaleta@dfo-mpo.gc.ca>, "Lewis, Valerie" <Valerie.Lewis@dfo-mpo.gc.ca>, "Richter, Julie" <Julie.Richter@dfo-mpo.gc.ca>, "Genier, Sylvie" <Sylvie.Genier@dfo-mpo.gc.ca>, "Jackson, Ashley" <Ashley.Jackson@dfo-mpo.gc.ca>, "McElhone, Kathryn" <Kathryn.Mcelhone@dfo-mpo.gc.ca>, "Reid, Rebecca" <Rebecca.Reid@dfo-mpo.gc.ca>  
Subject: Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi, because the line below is not confirmed (as far as I know), I suggest deleting. Otherwise, fine with me. Arran

The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** ComApproval / Approbation (DFO/MPO)

**Sent:** Saturday, June 1, 2019 9:57 AM

**To:** McPherson, Arran; ComApproval / Approbation (DFO/MPO); Morel, Philippe

**Cc:** Burns, Adam; Morris, Christina; Hubley, Marian; Quinn, Caroline; Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren; Northcott, Jennifer; McGill, Stephanie; Patrick, Lindsey; Kaleta, Michelle; Lewis, Valerie; Richter, Julie; Genier, Sylvie; Jackson, Ashley; McElhone, Kathryn; Reid, Rebecca

**Subject:** RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Thank you Arran, please see the revised lines below. Let me know if you have any concerns.

Media lines:

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon. Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk.
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June.
- Motiles are lice in the free-moving stage of their life cycle. Sea lice levels at the remaining 6 farms in the Clayoquot Sound area are below threshold.

- Fisheries and Oceans Canada researchers are working closely with partners to investigate alternate solutions for reducing sea lice infestations that can plague salmon farms.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted 30 site inspections at farm sites in B.C. in 2019. Of those inspections, only 1 farm had levels which exceeded thresholds, this farm has been completely harvested.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act. in regulations, legislation and their licence conditions. This is what Canadians expect.
- British Columbians and all Canadians care deeply about the protection of wild pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html) <<http://atwww.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html>>.
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) <<http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6>> . These conditions remain in effect until 2022.

Thank you,

Molly (Malinda) Flemming  
Ministerial Events and Editorial Services  
613-998-8115

-----Original Message-----

From: McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>

Sent: Saturday, June 1, 2019 5:50 AM

To: ComApproval / Approbation (DFO/MPO) <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)>; Morel, Philippe <[Philippe.Morel@dfo-mpo.gc.ca](mailto:Philippe.Morel@dfo-mpo.gc.ca)>

Cc: Burns, Adam <[Adam.Burns@dfo-mpo.gc.ca](mailto:Adam.Burns@dfo-mpo.gc.ca)>; Morris, Christina <[Christina.Morris@dfo-mpo.gc.ca](mailto:Christina.Morris@dfo-mpo.gc.ca)>; Hubley, Marian <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>; Quinn, Caroline <[Caroline.Quinn@dfo-mpo.gc.ca](mailto:Caroline.Quinn@dfo-mpo.gc.ca)>; Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>; Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Moore, Wayne <[Wayne.Moore@dfo-mpo.gc.ca](mailto:Wayne.Moore@dfo-mpo.gc.ca)>; Goetze, Darren <[Darren.Goetze@dfo-mpo.gc.ca](mailto:Darren.Goetze@dfo-mpo.gc.ca)>; Northcott, Jennifer <[Jennifer.Northcott@dfo-mpo.gc.ca](mailto:Jennifer.Northcott@dfo-mpo.gc.ca)>; McGill, Stephanie <[Stephanie.McGill@dfo-mpo.gc.ca](mailto:Stephanie.McGill@dfo-mpo.gc.ca)>; Patrick, Lindsey <[Lindsey.Patrick@dfo-mpo.gc.ca](mailto:Lindsey.Patrick@dfo-mpo.gc.ca)>; Kaleta, Michelle <[Michelle.Kaleta@dfo-mpo.gc.ca](mailto:Michelle.Kaleta@dfo-mpo.gc.ca)>; Lewis, Valerie <[Valerie.Lewis@dfo-mpo.gc.ca](mailto:Valerie.Lewis@dfo-mpo.gc.ca)>; Richter, Julie <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>; Genier, Sylvie <[Sylvie.Genier@dfo-mpo.gc.ca](mailto:Sylvie.Genier@dfo-mpo.gc.ca)>; Jackson, Ashley <[Ashley.Jackson@dfo-mpo.gc.ca](mailto:Ashley.Jackson@dfo-mpo.gc.ca)>; McElhone, Kathryn <[Kathryn.McElhone@dfo-mpo.gc.ca](mailto:Kathryn.McElhone@dfo-mpo.gc.ca)>; Reid, Rebecca <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>

Subject: RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Approved. You may want to break the fifth bullet up and also consider adding something about sea lice being the subject of dfo research. Neither is imperative, though. Arran \_\_\_\_\_

From: ComApproval / Approbation (DFO/MPO)

Sent: Friday, May 31, 2019 8:44 PM

To: Morel, Philippe; ComApproval / Approbation (DFO/MPO)

Cc: McPherson, Arran; Burns, Adam; Morris, Christina; Hubley, Marian; Quinn, Caroline; Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren; Northcott, Jennifer; McGill, Stephanie; Patrick, Lindsey; Kaleta, Michelle; Lewis, Valerie; Richter, Julie; Genier, Sylvie; Jackson, Ashley; McElhone, Kathryn; Reid, Rebecca

Subject: RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hello Philippe,

These have been fully approved in Pacific region and are largely based on preapproved material. MinO has asked to see these urgently so given the time constraints and regional approval we moved them directly to ADMs.

Thank you,

Molly (Malinda) Flemming

Ministerial Events and Editorial Services

From: Morel, Philippe <[Philippe.Morel@dfo-mpo.gc.ca](mailto:Philippe.Morel@dfo-mpo.gc.ca)>

Sent: Friday, May 31, 2019 8:32 PM

To: ComApproval / Approbation (DFO/MPO) <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)>

Cc: McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Burns, Adam <[Adam.Burns@dfo-mpo.gc.ca](mailto:Adam.Burns@dfo-mpo.gc.ca)>; Morris, Christina <[Christina.Morris@dfo-mpo.gc.ca](mailto:Christina.Morris@dfo-mpo.gc.ca)>; Hubley, Marian <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>; Quinn, Caroline <[Caroline.Quinn@dfo-mpo.gc.ca](mailto:Caroline.Quinn@dfo-mpo.gc.ca)>; Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>; Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Moore, Wayne <[Wayne.Moore@dfo-mpo.gc.ca](mailto:Wayne.Moore@dfo-mpo.gc.ca)>; Goetze, Darren <[Darren.Goetze@dfo-mpo.gc.ca](mailto:Darren.Goetze@dfo-mpo.gc.ca)>; Northcott, Jennifer <[Jennifer.Northcott@dfo-mpo.gc.ca](mailto:Jennifer.Northcott@dfo-mpo.gc.ca)>; McGill, Stephanie <[Stephanie.McGill@dfo-mpo.gc.ca](mailto:Stephanie.McGill@dfo-mpo.gc.ca)>; Patrick, Lindsey <[Lindsey.Patrick@dfo-mpo.gc.ca](mailto:Lindsey.Patrick@dfo-mpo.gc.ca)>; Kaleta, Michelle <[Michelle.Kaleta@dfo-mpo.gc.ca](mailto:Michelle.Kaleta@dfo-mpo.gc.ca)>; Lewis, Valerie <[Valerie.Lewis@dfo-mpo.gc.ca](mailto:Valerie.Lewis@dfo-mpo.gc.ca)>; Richter, Julie <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>; Genier, Sylvie <[Sylvie.Genier@dfo-mpo.gc.ca](mailto:Sylvie.Genier@dfo-mpo.gc.ca)>; Jackson, Ashley <[Ashley.Jackson@dfo-mpo.gc.ca](mailto:Ashley.Jackson@dfo-mpo.gc.ca)>; McElhone, Kathryn <[Kathryn.McElhone@dfo-mpo.gc.ca](mailto:Kathryn.McElhone@dfo-mpo.gc.ca)>; Reid, Rebecca <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>

Subject: Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

I don't see track of DG and region approval

Please confirm

Philippe Morel

ADM Aquatic Ecosystems

SMA Écosystèmes aquatiques

613-993-1914

Le 31 mai 2019 à 20:03, ComApproval / Approbation (DFO/MPO) <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)><<mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>>> a écrit :

Hello,

Please see below for your urgent approval a set of media lines.

Deadline: As soon as possible

Approval:

Philippe Morel - pending

Arran McPherson - pending  
Adam Burns - pending  
Marian Hubley - pending  
SADMO - FYI  
DMO - pending  
MinO - pending

Issue: Given recent media requests and coverage of sea lice levels being high again at aquaculture sites in Clayoquot Sound and the Broughton Archipelago, the Department is aware of a potential for reaction from local First Nations. Media lines have been prepared.

Media lines:

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk.
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June. Motiles are lice in the free-moving stage of their life cycle. Sea lice levels at the remaining 6 farms in the Clayoquot Sound area are below threshold.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted 30 site inspections at farm sites in B.C. in 2019. Of those inspections, only 1 farm had levels which exceeded thresholds, this farm has been completely harvested.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act. in regulations, legislation and their licence conditions. This is what Canadians expect.
- British Columbians and all Canadians care deeply about the protection of wild pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html) <<http://atwww.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html>>.
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) <<http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6>> . These conditions remain in effect until 2022.

Molly (Malinda) Flemming  
Ministerial Events and Editorial Services

613-998-8115

No information has been removed or severed from this page

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Saturday, June 1, 2019 2:06 PM  
**To:** Reid, Rebecca  
**Cc:** Girouard, Louise  
**Subject:** RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June.

This line answers this question below. This is not WVCI which is, for aquaculture purposes, another management area, but for Clayoquot management area. We checked the article in the social media and it is focused on Clayoquot and the Broughton (another management area where there are no exceedances for 2019 at this time) which is why we provided this info. So yes, there were some exceedances in Clayoquot in 2019 which were reported and acted upon to reduce the lice levels and protect the out-migrating juvenile salmon consistent with our COLs. We will continue to monitor and take actions as soon as any exceedances are detected.

I would suggest deleting the following line which I believe to be factually incorrect and contradicts the above media line.

In 2019, DFO has conducted 30 site inspections at farm sites in B.C. in 2019. Of those inspections, only 1 farm had levels which exceeded thresholds, this farm has been completely harvested.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Sent:** Saturday, June 1, 2019 1:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Subject:** Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

The claim from DNS and [REDACTED] is exploding lice population on wcvi. This line was trying to address the issue

s.19(1)

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: "Webb, Allison" <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

Date: 2019-06-01 10:38 AM (GMT-08:00)  
To: "Reid, Rebecca" <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>  
Cc: "Girouard, Louise" <[Louise.Girouard@dfo-mpo.gc.ca](mailto:Louise.Girouard@dfo-mpo.gc.ca)>  
Subject: Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi - these lines didn't come thru me for review yesterday. I am not clear what this line is trying to say so would suggest deleting. If there is a particular message that we are trying to convey, let me know and I'll draft something. If I can check the lines before they go up - if time - in all cases, I would appreciate too. Be in the office 11ish. Thx

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Reid, Rebecca  
**Sent:** Saturday, June 1, 2019 8:44 AM  
**To:** Webb, Allison  
**Cc:** Girouard, Louise  
**Subject:** Fwd: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi Allison - can we confirm this one line?  
RR

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: "McPherson, Arran" <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>  
Date: 2019-06-01 7:23 AM (GMT-08:00)  
To: "ComApproval / Approbation (DFO/MPO)" <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)>, "ComApproval / Approbation (DFO/MPO)" <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)>, "Morel, Philippe" <[Philippe.Morel@dfo-mpo.gc.ca](mailto:Philippe.Morel@dfo-mpo.gc.ca)>  
Cc: "Burns, Adam" <[Adam.Burns@dfo-mpo.gc.ca](mailto:Adam.Burns@dfo-mpo.gc.ca)>, "Morris, Christina" <[Christina.Morris@dfo-mpo.gc.ca](mailto:Christina.Morris@dfo-mpo.gc.ca)>, "Hubley, Marian" <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>, "Quinn, Caroline" <[Caroline.Quinn@dfo-mpo.gc.ca](mailto:Caroline.Quinn@dfo-mpo.gc.ca)>, "Fagan, Ashley" <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>, "Dostal, Alexandra" <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>, "Moore, Wayne" <[Wayne.Moore@dfo-mpo.gc.ca](mailto:Wayne.Moore@dfo-mpo.gc.ca)>, "Goetze, Darren" <[Darren.Goetze@dfo-mpo.gc.ca](mailto:Darren.Goetze@dfo-mpo.gc.ca)>, "Northcott, Jennifer" <[Jennifer.Northcott@dfo-mpo.gc.ca](mailto:Jennifer.Northcott@dfo-mpo.gc.ca)>, "McGill, Stephanie" <[Stephanie.McGill@dfo-mpo.gc.ca](mailto:Stephanie.McGill@dfo-mpo.gc.ca)>, "Patrick, Lindsey" <[Lindsey.Patrick@dfo-mpo.gc.ca](mailto:Lindsey.Patrick@dfo-mpo.gc.ca)>, "Kaleta, Michelle" <[Michelle.Kaleta@dfo-mpo.gc.ca](mailto:Michelle.Kaleta@dfo-mpo.gc.ca)>, "Lewis, Valerie" <[Valerie.Lewis@dfo-mpo.gc.ca](mailto:Valerie.Lewis@dfo-mpo.gc.ca)>, "Richter, Julie" <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>, "Genier, Sylvie" <[Sylvie.Genier@dfo-mpo.gc.ca](mailto:Sylvie.Genier@dfo-mpo.gc.ca)>, "Jackson, Ashley" <[Ashley.Jackson@dfo-mpo.gc.ca](mailto:Ashley.Jackson@dfo-mpo.gc.ca)>, "McElhone, Kathryn" <[Kathryn.McElhone@dfo-mpo.gc.ca](mailto:Kathryn.McElhone@dfo-mpo.gc.ca)>, "Reid, Rebecca" <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>  
Subject: Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hi, because the line below is not confirmed (as far as I know), I suggest deleting. Otherwise, fine with me. Arran

The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.

Sent from my BlackBerry 10 smartphone on the Bell network.

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**From:** ComApproval / Approbation (DFO/MPO)  
**Sent:** Saturday, June 1, 2019 9:57 AM  
**To:** McPherson, Arran; ComApproval / Approbation (DFO/MPO); Morel, Philippe

**Cc:** Burns, Adam; Morris, Christina; Hubley, Marian; Quinn, Caroline; Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren; Northcott, Jennifer; McGill, Stephanie; Patrick, Lindsey; Kaleta, Michelle; Lewis, Valerie; Richter, Julie; Genier, Sylvie; Jackson, Ashley; McElhone, Kathryn; Reid, Rebecca  
**Subject:** RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Thank you Arran, please see the revised lines below. Let me know if you have any concerns.

Media lines:

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- Fisheries and Oceans Canada researchers are working closely with partners to investigate alternate solutions for reducing sea lice infestations that can plague salmon farms.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted 30 site inspections at farm sites in B.C. in 2019. Of those inspections, only 1 farm had levels which exceeded thresholds, this farm has been completely harvested.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.
- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act. in regulations, legislation and their licence conditions. This is what Canadians expect.
- British Columbians and all Canadians care deeply about the protection of wild pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html) <<http://atwww.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html>>.
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) <<http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6>> . These conditions remain in effect until 2022.

Thank you,

Molly (Malinda) Flemming



Ministerial Events and Editorial Services  
613-998-8115

-----Original Message-----

From: McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>  
Sent: Saturday, June 1, 2019 5:50 AM  
To: ComApproval / Approbation (DFO/MPO) <ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>; Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>  
Cc: Burns, Adam <Adam.Burns@dfo-mpo.gc.ca>; Morris, Christina <Christina.Morris@dfo-mpo.gc.ca>; Hubley, Marian <Marian.Hubley@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>; Northcott, Jennifer <Jennifer.Northcott@dfo-mpo.gc.ca>; McGill, Stephanie <Stephanie.McGill@dfo-mpo.gc.ca>; Patrick, Lindsey <Lindsey.Patrick@dfo-mpo.gc.ca>; Kaleta, Michelle <Michelle.Kaleta@dfo-mpo.gc.ca>; Lewis, Valerie <Valerie.Lewis@dfo-mpo.gc.ca>; Richter, Julie <Julie.Richter@dfo-mpo.gc.ca>; Genier, Sylvie <Sylvie.Genier@dfo-mpo.gc.ca>; Jackson, Ashley <Ashley.Jackson@dfo-mpo.gc.ca>; McElhone, Kathryn <Kathryn.Mcelhone@dfo-mpo.gc.ca>; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
Subject: RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Approved. You may want to break the fifth bullet up and also consider adding something about sea lice being the subject of dfo research. Neither is imperative, though. Arran \_\_\_\_\_

From: ComApproval / Approbation (DFO/MPO)  
Sent: Friday, May 31, 2019 8:44 PM  
To: Morel, Philippe; ComApproval / Approbation (DFO/MPO)  
Cc: McPherson, Arran; Burns, Adam; Morris, Christina; Hubley, Marian; Quinn, Caroline; Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren; Northcott, Jennifer; McGill, Stephanie; Patrick, Lindsey; Kaleta, Michelle; Lewis, Valerie; Richter, Julie; Genier, Sylvie; Jackson, Ashley; McElhone, Kathryn; Reid, Rebecca  
Subject: RE: FOR URGENT APPROVALS: Media Lines - Sea Lice

Hello Philippe,

These have been fully approved in Pacific region and are largely based on preapproved material. MinO has asked to see these urgently so given the time constraints and regional approval we moved them directly to ADMs.

Thank you,

Molly (Malinda) Flemming  
Ministerial Events and Editorial Services

From: Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>  
Sent: Friday, May 31, 2019 8:32 PM  
To: ComApproval / Approbation (DFO/MPO) <ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>  
Cc: McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Burns, Adam <Adam.Burns@dfo-mpo.gc.ca>; Morris, Christina <Christina.Morris@dfo-mpo.gc.ca>; Hubley, Marian <Marian.Hubley@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>; Northcott, Jennifer <Jennifer.Northcott@dfo-mpo.gc.ca>; McGill, Stephanie <Stephanie.McGill@dfo-mpo.gc.ca>; Patrick, Lindsey <Lindsey.Patrick@dfo-mpo.gc.ca>; Kaleta, Michelle <Michelle.Kaleta@dfo-mpo.gc.ca>; Lewis, Valerie <Valerie.Lewis@dfo-mpo.gc.ca>; Richter, Julie <Julie.Richter@dfo-mpo.gc.ca>; Genier, Sylvie <Sylvie.Genier@dfo-mpo.gc.ca>; Jackson, Ashley <Ashley.Jackson@dfo-mpo.gc.ca>; McElhone, Kathryn <Kathryn.Mcelhone@dfo-mpo.gc.ca>; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>

Subject: Re: FOR URGENT APPROVALS: Media Lines - Sea Lice

I don't see track of DG and region approval

Please confirm  
Philippe Morel  
ADM Aquatic Ecosystems  
SMA Écosystèmes aquatiques  
613-993-1914

Le 31 mai 2019 à 20:03, ComApproval / Approbation (DFO/MPO) <[ComApproval/Approbation.XNCR@dfo-mpo.gc.ca](mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca)<<mailto:ComApproval/Approbation.XNCR@dfo-mpo.gc.ca>>> a écrit :

Hello,

Please see below for your urgent approval a set of media lines.

Deadline: As soon as possible

Approval:  
Philippe Morel - pending  
Arran McPherson - pending  
Adam Burns - pending  
Marian Hubley - pending  
SADMO - FYI  
DMO - pending  
MinO - pending

Issue: Given recent media requests and coverage of sea lice levels being high again at aquaculture sites in Clayoquot Sound and the Broughton Archipelago, the Department is aware of a potential for reaction from local First Nations. Media lines have been prepared.

Media lines:

- Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.
- Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment.
- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- Fisheries and Oceans Canada's (DFO's) requirements ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk.
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June. Motiles are lice in the free-moving stage of their life cycle. Sea lice levels at the remaining 6 farms in the Clayoquot Sound area are below threshold.
- Currently, in the Broughton Archipelago, data shows that all farms were within the threshold for lice levels at farms during the 2019 outmigration period.
- DFO has performed routine sea lice audits at Broughton Archipelago and Clayquot Sound sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. In 2019, DFO has conducted 30 site inspections at farm sites in B.C. in 2019. Of those inspections, only 1 farm had levels which exceeded thresholds, this farm has been completely harvested.
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period.

- Unfortunately, due to the impacts of climate change, our ocean temperatures are rising, creating favorable conditions for the growth of sea lice. The levels of lice present may have once again been high in the Clayoquot Sound region during the wild juvenile salmon outmigration period this spring.
- It is important that companies who do business on the ocean follow the rules and guidelines outlined in the Fisheries Act, in regulations, legislation and their licence conditions. This is what Canadians expect.
- British Columbians and all Canadians care deeply about the protection of wild Pacific salmon. We do too. That is why we are taking action to ensure that all BC farms stay within levels to ensure that our migrating wild salmon have healthy waters to pass through.
- DFO's aquaculture audit and reporting program is designed to protect wild juvenile salmon as they outmigrate. Our focus is on monitoring sea lice at salmon farms to ensure that lice levels are below thresholds during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html) <<http://atwww.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html>>.
- Licence conditions related to sea lice management can be found at [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6) <<http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6>> . These conditions remain in effect until 2022.

Molly (Malinda) Flemming  
Ministerial Events and Editorial Services  
613-998-8115



**Pages 405 to / à 409  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**23**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**Patirana, Anoma**

---

**From:** Webb, Allison  
**Sent:** June-01-19 3:05 PM  
**To:** Paylor, Adrienne  
**Cc:** Patirana, Anoma  
**Subject:** Note for your review  
**Attachments:** MTM\_proposed enhacements to sea lice management in BC\_June 1\_2019\_v2  
(002).aw.docx

Here you go – I had to send up [REDACTED]. If you have any strong concerns or changes, let Anoma know and we'll revise on Monday before this goes into the system. It's not officially in there yet.

Thanks and [REDACTED]  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Fisheries Management

Gestion des Pêches

Regional Director

Directeur Régional

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AND LITIGATION PRIVILEGE

2019-xx-xxxx

MEMORANDUM FOR THE MINISTER

**PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH  
COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO REGIONAL DIRECTOR GENERAL**

While sea lice abundance exceedances over the current threshold have been relatively rare since 2011, exceedances have been observed in some areas of the BC Coast over the last two years.

This has led the Department to reconsider its current sea lice conditions of licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon migration window.

A number of proposed enhancements to current licence conditions are being considered including [REDACTED]

DFO will engage Indigenous organizations, the Province of BC, Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

s.21(1)(a)

s.21(1)(b)

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration ~~from freshwater to the ocean, a corresponding "outmigration window"~~ (March 1 to June 30 of each year), marine finfish aquaculture sites require monitoring and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the condition of licence (COL). If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance.

~~with different requirements for management of lice levels is incorporated into the licence conditions.~~

The veracity of industry reported data is assured through ~~independent~~ auditing performed by DFO's Fish Health Audit and Intelligence Program (FHAIP). In the outmigration period, DFO

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conducts sea lice audits on 50% of all active Atlantic salmon sites and less frequent audits at other times of the year.

This program provides DFO with timely information regarding the operational performance and compliance of aquaculture facilities. In British Columbia, DFO issues licenses for marine finfish aquaculture that require monitoring and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded.

During most years, more than 90 percent of sites in British Columbia have been are below the regulatory thresholds for sea lice during the wild salmon outmigration period, but can be variable and affected. Sea lice populations are affected by environmental conditions, and thrive in warm water temperatures and high salinity levels. Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance. During the wild salmon outmigration licence holders must carry out a sea lice abundance assessment every two weeks and report these results monthly. If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance. In the outmigration period, DFO conducts sea lice audits on 50% of all active Atlantic salmon sites and less frequent audits at other times of the year.

Since 2011, sea lice abundance exceedances have been relatively rare. However, in the last two years, sea lice exceedances have been observed in some areas. For example, in 2016 sea lice exceedances were observed in several Grieg farms in the Esperanza area and more recently, in 2018, sea lice exceedances were observed for 14 Cermaq farms in Clayoquot Sound.

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Challenges resolving the Clayoquot situation in 2018 led to increased scrutiny of the Department and efforts by DFO staff to work with DFO's Conservation and Protection (C&P) to lay charges were unsuccessful. On March 1, 2019, C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

This year, three Cermaq Canada marine finfish aquaculture sites in Clayoquot Sound were over threshold entering the outmigration period, and while being resolved have generated significant media attention. On March 1, 2019 C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

Currently, in BC sea lice management options are limited and rely on a single therapeutic, emamectin benzoate (SLICE), to manage sea lice levels on farmed fish. DFO has been monitoring and analyzing sea lice data since 2011 for indication of SLICE resistance. It is expected that The sea lice exceedances experienced in Clayoquot Sound in 2018 were due to SLICE resistance, largely brought on by environmental changes. While SLICE resistance has been documented in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018), sea lice resistance has never been observed to date in the Broughton Area.



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The rotational use of alternative methods is part of an integrated pest management (IPM) approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish. The Province of BC, Industry and DFO are working together to explore IPM options.

### STRATEGIC CONSIDERATIONS

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to ~~will be opening up~~ open the sea lice Conditions of Licence (COL) related to sea lice with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish moving between marine sites. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As challenges have emerged in several other areas of the coast with sea lice management, DFO is considering a range of new amendments to COL to allow better regulation, while also providing additional tools and guidance to industry. These include moving to a more area based approach to sea lice management consistent with the new approach to aquaculture by DFO.

Implementing these changes will require changing COL which can be achieved by demonstrating a conservation concern, or through a request to industry for voluntary consent to amend COL. A further assessment is required as well as consultation to inform the approach to opening the COL, however, it could be expected that industry would be is expected to be amenable to making the request given the current public concern on these issue and the recent challenges on some of their farms. the latter approach, given the social licence challenges this issue has generated for the aquaculture sector. Given the need to open COL for some of the other suggested changes in the area of fish health, this could be done at one time.

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that have also increased the challenges regarding treatment. In the case of hydrogen peroxide, their current permit process is lengthy and requires public consultation. [REDACTED] It will be important that any work in this area includes the BC Ministry of the Environment.

2019-XXX-XXXXX- Proposed enhancements to sea lice management in British Columbia  
Anoma Patirana, A/Regional Manager, 604-666-7519 / Allison Webb / pd

.../4

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s.21(1)(a)

s.21(1)(b)

- 4 -

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### **SCIENCE ADVICE**

DFO Science in the Pacific Region continues to conduct research on sea lice focusing on a number of areas. In addition, management has requested science advice on sea lice management with a focus on areas such as whether sea lice, originating from Atlantic salmon farms impact wild salmonid populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in sockeye salmon, [REDACTED]. Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

### **INTERDEPARTMENTAL CONSULTATIONS**

No other departments were consulted in developing this briefing note.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required. ~~multi-stakeholder technical working group (TWG) on Fish Health on the proposed approach for enhancing sea lice management and regulation.~~

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. The Department will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG-WG on Fish Health.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. The Department is prepared to continue its on-going briefings with you on this file, as requested.

---

Timothy Sargent  
Deputy Minister

---

Kevin Stringer  
Associate Deputy Minister

s.21(1)(a)

s.21(1)(b)



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Correspondence Routing Slip - 5    Pêches et Océans Canada    UNCLASSIFIED

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GCCMS #: 2019-XXX-XXXXX

EKME #: XXXXXXXX

To: Timothy Sargent Date:

Object: **PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH**  
Objet: **COLUMBIA**

From / Rebecca Reid, Regional Director General, Fisheries Management  
De:

Add ADM Science, Ecosystems, etc



Material for the Minister  
Documents pour le Ministre

**X**

Your Signature  
 Votre signature

9

## Information

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors:

**Distribution:**

**Drafting Officer/  
Rédacteur:**

ANOMA PATIRANA (604) 666-9571 / Allison Webb / dw

**s.23**

## Patirana, Anoma

---

**From:** Patirana, Anoma  
**Sent:** June-01-19 7:14 PM  
**To:** Paylor, Adrienne  
**Cc:** Webb, Allison  
**Subject:** RE: Note for your review

These are really important distinctions Adrienne. Thank you. The note has gone [REDACTED] Jay, Andy and Rebecca for review but it's by no means a done deal so I will ensure to incorporate these changes in the next version. To answer your question science is doing some research in sea lice and Simon Jones sent us a list of research he's working on a couple of weeks ago (for the MIN deck). The multi-stakeholder TWG is something that came out of discussions at the senior level with the Minister (\*I think\* - Allison can verify). Basically it's an approach that's being proposed for BC so it would be distinct from the FHAC. I have some info on it somewhere which I'll dig out and send to you.

Thanks for taking a look!  
-Anoma

---

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Saturday, June 1, 2019 6:46 PM  
**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** RE: Note for your review

A couple of importance adjustments in the attached.

Anoma what is the "multi-stakeholder technical working group (TWG) on Fish Health"? Is this the new Broughton working groups or are you talking about our FHAC that Zac & I set up? We do not have the province or NGO's on the FHAC as it is just FH technical experts (mostly vets).

Important corrections to note:

- Esperanza/Grieg exceedances where in 2017 not 2016
- sea lice exceedances experienced in Clayoquot Sound in 2018 were due to SLICE resistance, [REDACTED] not brought on by environmental change just made worse by warm water conditions...plus we took lice and confirmed the resistance so it is not "expected" it was DFO confirmed (first time we ever did our own test)
- We need to be careful how we talk about SLICE resistance.....it is my understanding that up until 2018 (when we took our own samples of lice) this is the only time we have our own evidence of resistance.....otherwise we just see over exceedances and failed treatments in the data that might be for a variety of reasons not just resistance. [REDACTED] industry will tell us what their bioassays say but saying there was not resistance in the Broughton is just us saying we don't see exceedances or patterns in the data to suggest this.....we have done no testing nor has industry sent in any bioassays to confirm this.
- I don't know if Science is doing any further research on sea lice right now??? We may want to be more general with this statement.

Call me if you want to discuss any of this at any time before Monday. I'm going to share this with Zac and Sarah in case they can highlight something we missed but think we should be good ☺

Thx Adrienne

---

**From:** Webb, Allison  
**Sent:** June-01-19 3:05 PM  
**To:** Paylor, Adrienne

s.20(1)(b)  
s.23

**Cc:** Patirana, Anoma

**Subject:** Note for your review

Here you go – I had to send up [REDACTED] If you have any strong concerns or changes, let Anoma know and we'll revise on Monday before this goes into the system. It's not officially in there yet.

Thanks and [REDACTED]

Allison

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)

## Patirana, Anoma

---

**From:** Paylor, Adrienne  
**Sent:** June-02-19 11:00 AM  
**To:** Patirana, Anoma  
**Cc:** Webb, Allison  
**Subject:** FW: Note for your review  
**Attachments:** MTM\_proposed enhancements to sea lice management in BC\_June 1\_2019\_v2 (002).ZW edits.docx

Hi Anoma,

A few more comments/clarification from Zac which is hopefully helpful. Let me know if you want to chat about any of this. Thx

---

**From:** Waddington, Zac  
**Sent:** June-02-19 7:58 AM  
**To:** Paylor, Adrienne; McConnachie, Sarah; Manchester, Howie  
**Subject:** RE: Note for your review

Please see my attached edits. Let me know if you have any questions,

zac

---

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** June-01-19 6:49 PM  
**To:** Waddington, Zac <Zac.Waddington@dfo-mpo.gc.ca>; McConnachie, Sarah <Sarah.Mcconnachie@dfo-mpo.gc.ca>; Manchester, Howie <Howie.Manchester@dfo-mpo.gc.ca>  
**Subject:** FW: Note for your review

Note going up Monday for the Minister to change sea lice COL's.....if you happen to see this before then and have an important correction then let me know.....otherwise we will follow up Monday. Thx A

---

**From:** Paylor, Adrienne  
**Sent:** June-01-19 6:46 PM  
**To:** Patirana, Anoma  
**Cc:** Webb, Allison  
**Subject:** RE: Note for your review

A couple of importance adjustments in the attached.

Anoma what is the "multi-stakeholder technical working group (TWG) on Fish Health"? Is this the new Broughton working groups or are you talking about our FHAC that Zac & I set up? We do not have the province or NGO's on the FHAC as it is just FH technical experts (mostly vets).

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Thx Adrienne

---

**From:** Webb, Allison  
**Sent:** June-01-19 3:05 PM  
**To:** Paylor, Adrienne  
**Cc:** Patirana, Anoma  
**Subject:** Note for your review

Here you go – I had to send up [REDACTED] If you have any strong concerns or changes, let Anoma know and we'll revise on Monday before this goes into the system. It's not officially in there yet.

Thanks and [REDACTED]  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)  
s.20(1)(b)



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Fisheries Management

Gestion des Pêches

Regional Director

Directeur Régional

**PROTECTED / SOLICITOR-CLIENT  
AND LITIGATION PRIVILEGE**

2019-xx-xxxx

**MEMORANDUM FOR THE MINISTER**

**PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH  
COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO REGIONAL DIRECTOR GENERAL**

While sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, exceedances have been observed in some areas of the BC Coast over the last two years.

This has led the Department to reconsider its current sea lice conditions of licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon migration window.

A number of proposed enhancements to current licence conditions are being considered including

DFO will engage Indigenous organizations, the Province of BC, Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

**Commented [PA1]:** What is this? The brought on groups? We do not have BC or NGO's on the FHAC.

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration from freshwater to the ocean, a corresponding "outmigration window" (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the condition of licence (COL). If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance. with different requirements for management of lice levels is incorporated into the licence conditions.

The veracity of industry reported data is assured through independent auditing performed by DFO's Fish Health Audit and Intelligence Program (FHAIP). In During the outmigration period,

**Commented [PA2]:** They have to count and report more frequently during the outmigration and notify

Canada

s.21(1)(a)

.../2

s.21(1)(b)



- 2 -

UNCLASSIFIED

~~DFO conducts~~ increases sea lice audits ~~to on~~ 50% of all active Atlantic salmon sites and ~~less frequent audits at other times of the year.~~

This program provides DFO with timely information regarding the operational performance and compliance of aquaculture facilities. In British Columbia, DFO issues licenses for marine finfish aquaculture that require monitoring and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded.

During most years, more than 90 percent of sites in British Columbia ~~have been~~ are below the regulatory thresholds for sea lice during the wild salmon outmigration period. ~~Environmental conditions such as increased temperatures and salinity, can dramatically increase lice numbers on wild and farmed fish making sea lice management challenging. The emergence of SLICE resistance in BC in the past number of years has exacerbated the lice management challenges, but can be variable and affected. Sea lice populations are affected by environmental conditions, and thrive in warm water temperatures and high salinity levels. Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance. During the wild salmon outmigration licence holders must carry out a sea lice abundance assessment every two weeks and report these results monthly. If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance. In the outmigration period, DFO conducts sea lice audits on 50% of all active Atlantic salmon sites and less frequent audits at other times of the year.~~

Since 2011, sea lice abundance exceedances have been relatively rare. However, in the last two years, sea lice exceedances have been observed in some two areas on the west coast of Vancouver Island. For example, in 2017 sea lice exceedances were observed in several Grieg farms in the Esperanza area and more recently, in 2018, sea lice exceedances were observed for 14 Cermaq farms in Clayoquot Sound.

Challenges resolving the Clayoquot situation in 2018 led to increased scrutiny of the Department and efforts by DFO staff to work with DFO's Conservation and Protection (C&P) to lay charges were unsuccessful. On March 1, 2019, C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

This year, three Cermaq Canada marine finfish aquaculture sites in Clayoquot Sound were over threshold entering the outmigration period; however they met all conditions of licence within the timeframes provided. Subsequently all three of the sites have been, or are currently close to being, harvested out. The lice management in Clayoquot in 2018 and again this year has, and while being resolved have generated significant media attention. On March 1, 2019 C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

Currently, in BC sea lice management options are limited and generally rely on a single therapeutic drug emamectin benzoate (SLICE), and one pesticide (hydrogen peroxide

- 3 -

UNCLASSIFIED

(Paramove® 50)) to manage sea lice levels on farmed fish. DFO has been monitoring and analyzing sea lice data since 2011 for indication of SLICE resistance. It is expected that the DFO took samples of lice and was able to confirm that SLICE resistance was a contributing factor to the sea lice exceedances experienced in Clayoquot Sound in 2018 were due to SLICE resistance, largely brought on which was also compounded by by unfavorable environmental changes conditions. While SLICE resistance has been documented observed in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018). To date SLICE resistance has never been observed by DFO to date in the Broughton Area.

The rotational use of alternative methods is part of an integrated pest management (IPM) approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish. The Province of BC, Industry and DFO are working together to explore IPM options.

### STRATEGIC CONSIDERATIONS

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to will be opening up open the sea lice Conditions of Licence (COL) related to sea lice with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish moving between marine sites. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As challenges have emerged in several other areas of the coast with sea lice management, DFO is considering a range of new amendments to COL to allow better regulation, while also providing additional tools and guidance to industry. These include moving to a more area based approach to sea lice management consistent with the new approach to aquaculture by DFO.

Implementing these changes improvements will require changing COL which can be achieved by demonstrating a conservation concern, or through a request to industry for voluntary consent to amend COL. A further assessment is required as well as consultation to inform the approach to opening the COL, however, it could be expected that industry would be is expected to be amenable to making the request given the current public concern on these issue and the recent

**Commented (PA3):** I think this would be better to say an agreement with industry to improve COL's and then a coordinated amendment request once decided upon.

- 4 -

UNCLASSIFIED

challenges on some of their farms. the latter approach, given the social licence challenges this issue has generated for the aquaculture sector. Given the need to open COL for some of the other suggested changes in the area of fish health, this could be done at one time.

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that have also increased the challenges regarding sea lice treatment. In the case of hydrogen peroxide, their current permit process is lengthy and requires public consultation.

It will be important that any work in this area includes the BC Ministry of the Environment.

### **SCIENCE ADVICE**

DFO Science in the Pacific Region continues to conduct research on sea lice focusing on a number of areas. In addition, management has requested science advice on sea lice management with a focus on areas such as whether sea lice, originating from Atlantic salmon farms impact wild salmonid populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in sockeye salmon, etc. Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

**Commented [PA4]:** Not sure if this is a true statement. Science feels they have told us all they can regarding sea lice so don't know what they are studying unless you guys know something I don't?

### **INTERDEPARTMENTAL CONSULTATIONS**

No other departments were consulted in developing this briefing note.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required. multi-stakeholder technical working group (TWG) on Fish Health on the proposed approach for enhancing sea lice management and regulation.

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. The Department will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG on Fish Health.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

s.14

s.21(1)(a)

s.21(1)(b)

- 5 -

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Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. The Department is prepared to continue its on-going briefings with you on this file, as requested.

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Timothy Sargent  
Deputy Minister

---

Kevin Stringer  
Associate Deputy Minister

**Page 425**  
**is a duplicate of**  
**est un duplicata de la**  
**page 415**

**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** June-02-19 11:20 AM  
**To:** Paylor, Adrienne  
**Cc:** Webb, Allison  
**Subject:** Re: Note for your review

Hey! Thanks for these edits from Zac. The nuances are important. We'll make sure they're included in the next version that goes up. Thanks to you both for reviewing :)

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** "Paylor, Adrienne" <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Date:** 2019-06-02 11:00 AM (GMT-08:00)  
**To:** "Patirana, Anoma" <Anoma.Patirana@dfo-mpo.gc.ca>  
**Cc:** "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: Note for your review

Hi Anoma,

A few more comments/clarification from Zac which is hopefully helpful. Let me know if you want to chat about any of this. Thx

---

**From:** Waddington, Zac  
**Sent:** June-02-19 7:58 AM  
**To:** Paylor, Adrienne; McConnachie, Sarah; Manchester, Howie  
**Subject:** RE: Note for your review

Please see my attached edits. Let me know if you have any questions,

zac

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** June-01-19 6:49 PM  
**To:** Waddington, Zac <Zac.Waddington@dfo-mpo.gc.ca>; McConnachie, Sarah <Sarah.Mcconnachie@dfo-mpo.gc.ca>; Manchester, Howie <Howie.Manchester@dfo-mpo.gc.ca>  
**Subject:** FW: Note for your review

Note going up Monday for the Minister to change sea lice COL's.....if you happen to see this before then and have an important correction then let me know.....otherwise we will follow up Monday. Thx A

---

**From:** Paylor, Adrienne  
**Sent:** June-01-19 6:46 PM  
**To:** Patirana, Anoma  
**Cc:** Webb, Allison  
**Subject:** RE: Note for your review

A couple of importance adjustments in the attached.

Anoma what is the "multi-stakeholder technical working group (TWG) on Fish Health"? Is this the new Broughton working groups or are you talking about our FHAC that Zac & I set up? We do not have the province or NGO's on the FHAC as it is just FH technical experts (mostly vets).

Important corrections to note:

- Esperanza/Grieg exceedances where in 2017 not 2016
- sea lice exceedances experienced in Clayoquot Sound in 2018 were due to SLICE resistance, **not** brought on by environmental change just made worse by warm water conditions...plus we took lice and confirmed the resistance so it is not "expected" it was DFO confirmed (first time we ever did our own test)
- We need to be careful how we talk about SLICE resistance.....it is my understanding that up until 2018 (when we took our own samples of lice) this is the only time we have our own evidence of resistance.....otherwise we just see over exceedances and failed treatments in the data that might be for a variety of reasons not just resistance. [REDACTED] industry will tell us what their bioassays say but saying there was not resistance in the Broughton is just us saying we don't see exceedances or patterns in the data to suggest this.....we have done no testing nor has industry sent in any bioassays to confirm this.
- I don't know if Science is doing any further research on sea lice right now??? We may want to be more general with this statement.

Call me if you want to discuss any of this at any time before Monday. I'm going to share this with Zac and Sarah in case they can highlight something we missed but think we should be good ☺

Thx Adrienne

---

**From:** Webb, Allison  
**Sent:** June-01-19 3:05 PM  
**To:** Paylor, Adrienne  
**Cc:** Patirana, Anoma  
**Subject:** Note for your review

Here you go – I had to send up [REDACTED] If you have any strong concerns or changes, let Anoma know and we'll revise on Monday before this goes into the system. It's not officially in there yet.

Thanks and [REDACTED]  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.19(1)  
s.20(1)(b)





Thank you, Allison

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

**If you think someone else** must approve and they aren't on our approval list, **please advise us ASAP and we will forward the documents for their approval.**

Thanks,  
Candace

***\*\*Please direct all e-mails regarding Minister's (001) and RDG's (501) correspondence to XPAC PRMCU.\*\****

Candace McGuire, Heather Fowlie & Alison Jacques

Managers, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada/Gouvernement du Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

s.21(1)(a)

s.21(1)(b)

s.23

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Monday, June 3, 2019 10:05 AM  
**To:** Webb, Allison  
**Subject:** [REDACTED]  
**Attachments:** [REDACTED]

Hi Allison,

[REDACTED]

[REDACTED]

[REDACTED]

Candace

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Tuesday, May 28, 2019 11:15 AM  
**To:** Sharzer, Stephen (DOJ) <stephen.sharzer@justice.gc.ca>; House, Matthew (DOJ) <Matthew.House@justice.gc.ca>; O'Brien, Jackie <Jackie.O'Brien@dfo-mpo.gc.ca>  
**Cc:** Pastorek, Doug <Doug.Pastorek@dfo-mpo.gc.ca>; Owens, Heather <Heather.Owens@dfo-mpo.gc.ca>  
**Subject:** [REDACTED]

Hi Steve and Matt:

[REDACTED]

Thank you, Allison

[REDACTED]

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

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Candace

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Candace McGuire, Heather Fowlie & Alison Jacques

s.21(1)(a)

Managers, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

s.21(1)(b)

s.23

**Pages 431 to / à 434  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**23**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Monday, June 3, 2019 10:28 AM  
**To:** Webb, Allison  
**Subject:** [REDACTED]

Hi.  
I understand.  
Thanks.

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Monday, June 03, 2019 10:17 AM  
**To:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Subject:** [REDACTED]

[REDACTED]

Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Sent:** Monday, June 3, 2019 10:06 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Question FW: [REDACTED]

Hi Allison,

[REDACTED]

[REDACTED]

Candace

s.21(1)(a)  
s.21(1)(b)  
s.23

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Tuesday, May 28, 2019 11:15 AM  
**To:** Sharzer, Stephen (DOJ) <stephen.sharzer@justice.gc.ca>; House, Matthew (DOJ) <Matthew.House@justice.gc.ca>; O'Brien, Jackie <Jackie.O'Brien@dfo-mpo.gc.ca>  
**Cc:** Pastorek, Doug <Doug.Pastorek@dfo-mpo.gc.ca>; Owens, Heather <Heather.Owens@dfo-mpo.gc.ca>  
**Subject:** \* [REDACTED]

Hi Steve and Matt:

[REDACTED]

Thank you, Allison

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Candace

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Managers, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
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s.21(1)(a)

s.21(1)(b)

s.23

**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** June-03-19 11:21 AM  
**To:** Webb, Allison  
**Cc:** Wilkinson, Davida  
**Subject:** Sea lice briefing note  
**Attachments:** MTM\_proposed enhacements to sea lice management in BC\_June 3\_2019\_v3.docx

Hey Allison, here's the revised note for your final review before we get Davida to enter into the system.  
-Anoma

**Anoma Patirana**

A/Regional Manager, Aquaculture Policy  
Fisheries and Oceans Canada, Pacific Region  
[anoma.patirana@dfo-mpo.gc.ca](mailto:anoma.patirana@dfo-mpo.gc.ca) / Tel: 604-666-9571

Gestionnaire régionale intérimaire, Politique de l'aquaculture  
Pêches et Océans Canada, région du Pacifique  
[anoma.patirana@dfo-mpo.gc.ca](mailto:anoma.patirana@dfo-mpo.gc.ca) / Tél. : 604-666-9571



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Fisheries Management

Gestion des Pêches

Deputy Minister

Sous-ministre

**PROTECTED / SOLICITOR-CLIENT  
AND LITIGATION PRIVILEGE**

2019-xx-xxxx

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COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO THE MINISTER**

Sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, exceedances have been observed in some areas of the BC Coast over the last two years.

This has led the Department to reconsider its current sea lice conditions of licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon outmigration window.

A number of proposed enhancements to current licence conditions are being considered including

DFO will engage Indigenous organizations, the Province of BC, Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the condition of licence (COL). If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance.

The veracity of industry reported data is assured through auditing performed by DFO's Fish Health Audit and Intelligence Program (FHAIP). During the outmigration period, DFO increases sea lice audits to 50% of all active Atlantic salmon sites.

s.21(1)(a)

s.21(1)(b)

.../2

During most years, more than 90 percent of sites in British Columbia have been below the regulatory thresholds for sea lice during the wild salmon outmigration period. Environmental conditions such as increased temperatures and salinity, can dramatically increase lice numbers on wild and farmed fish making sea lice management challenging. The emergence of SLICE resistance in BC in the past number of years has exacerbated the lice management challenges. In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island. For example, in 2017 and 2019 sea lice exceedances were observed in several Grieg farms in the Esperanza area and in 2018 and 2019, sea lice exceedances were observed for Cermaq farms in Clayoquot Sound.

Challenges resolving the Clayoquot situation in 2018 led to increased scrutiny of the Department and efforts by DFO staff to work with DFO's Conservation and Protection (C&P) to lay charges were unsuccessful. On March 1, 2019, C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

This year, three Cermaq Canada marine finfish aquaculture sites in Clayoquot Sound were over threshold entering the outmigration period; however they met all conditions of licence within the timeframes provided. Subsequently all three of the sites have been, or are currently close to being, harvested out. Similarly in 2019, all three Grieg sites in Esperanza were over threshold entering the outmigration period. However, as a result of hydrogen peroxide treatment and harvesting, sea lice levels are currently under threshold. The lice management in Clayoquot in 2018 and again this year has generated significant media attention.

Currently, in BC sea lice management options are limited and generally rely on a single drug emamectin benzoate (SLICE), and one pesticide (hydrogen peroxide (Paramove® 50)) to manage sea lice levels on farmed fish. DFO has been monitoring and analyzing sea lice data since 2011 for indication of SLICE resistance. DFO took samples of lice and was able to confirm that SLICE resistance was a contributing factor to the sea lice exceedances experienced in Clayoquot Sound in 2018 which was also compounded by unfavorable environmental conditions. SLICE resistance has been observed in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018). To date SLICE resistance has never been observed by DFO in the Broughton Area.

The rotational use of alternative methods is part of an integrated pest management (IPM) approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish. The Province of BC, Industry and DFO are working together to explore IPM options.



## **STRATEGIC CONSIDERATIONS**

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to open the Conditions of Licence (COL) related to sea lice with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish moving between marine sites. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As challenges have emerged in several other areas of the coast with sea lice management, DFO is considering a range of new amendments to COL to allow better regulation, while also providing additional tools and guidance to industry. These include moving to a more area based approach to sea lice management consistent with the new approach to aquaculture by DFO. [REDACTED]

Implementing these improvements will require changing COL which can be achieved by demonstrating a conservation concern, or through a request to industry for voluntary consent to amend COL. A further assessment is required as well as consultation to inform the approach to opening the COL, however, it could be expected that industry would be amenable to making the request given the current public concern on these issue and the recent challenges on some of their farms. Given the need to open COL for some of the other suggested changes in the area of fish health, this could be done at one time.

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that have also increased the challenges regarding sea lice treatment. In the case of hydrogen peroxide, their current permit process is lengthy and requires public consultation. [REDACTED]

[REDACTED] It will be important that any work in this area includes the BC Ministry of the Environment.

## **SCIENCE ADVICE**

DFO Science in the Pacific Region conducts research on sea lice focusing on a number of areas. In addition, management has requested science advice on sea lice management with a focus on areas such as whether sea lice, originating from Atlantic salmon farms impact wild salmonid

populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in sockeye salmon, [REDACTED]  
Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

### **INTERDEPARTMENTAL CONSULTATIONS**

No other departments were consulted in developing this briefing note.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required.

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. The Department will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. The Department is prepared to continue its on-going briefings with you on this file, as requested.

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Timothy Sargent  
Deputy Minister

---

Kevin Stringer  
Associate Deputy Minister

s.21(1)(a)

s.21(1)(b)



Fisheries and Oceans Canada  
Correspondence Routing Slip

Fiche d'acheminement de correspondance  
- 5 Pêches et Océans Canada

UNCLASSIFIED

GCCMS #: 2019-XXX-XXXXX

EKME #: XXXXXXXX

To: Timothy Sargent  
Pour:

Date:

Object: **PROPOSED ENHACEMENTS TO SEA LICE MANAGEMENT IN BRITISH**  
Objet: **COLUMBIA**

From / Rebecca Reid, Regional Director General, Fisheries Management  
De:

Arran McPherson, Assistant Deputy Minister, Ecosystems and Oceans Science



☐ Material for the Minister  
Documents pour le Ministre

☒ Your Signature  
Votre signature

☐ Information

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors:

Distribution:

Drafting Officer/  
Rédacteur:

ANOMA PATIRANA (604) 666-9571 / Allison Webb / dw

s.23

## **Wilkinson, Davida**

---

**From:** Paylor, Adrienne  
**Sent:** Monday, June 3, 2019 11:25 AM  
**To:** Shaw, Kerra; Webb, Allison; Rainer, Michelle; McConnachie, Sarah  
**Subject:** RE: For approval: media inquiry on Lufeneron

Hi Michelle

I would move the bullet stating the Lufeneron is not administered in the Ocean right up front and add the withdrawal time before they can be moved out to a marine site:

When used to treat salmon, Lufeneron is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities and fish are held on land long enough (two weeks) to ensure Lufeneron has moved through their system prior to transfer to marine sites.

---

**From:** Shaw, Kerra  
**Sent:** June-03-19 11:18 AM  
**To:** Webb, Allison; Rainer, Michelle; Paylor, Adrienne; McConnachie, Sarah  
**Subject:** RE: For approval: media inquiry on Lufeneron

Hi – some suggested edits by me. Feel free to override if Sarah or Adrienne disagree 😊 My comments in red.

---

**From:** Webb, Allison  
**Sent:** June-03-19 11:08 AM  
**To:** Rainer, Michelle; Paylor, Adrienne; Shaw, Kerra; McConnachie, Sarah  
**Subject:** RE: For approval: media inquiry on Lufeneron

Hi Michelle – Has Adrienne or Kerra seen this first? Just wanted to check as they could likely comment or our fish health staff on the last bullet as well

Tx so much,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Monday, June 3, 2019 10:54 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** For approval: media inquiry on Lufenuron  
**Importance:** High

Hi Allison,

You have previously approved all of these lines; please let me know if you have any concerns about use in this response; I have asked Science for any additional input they might have on the last question.

**Issue:** [REDACTED] CHEK TV ([REDACTED]). We're doing a story looking into the emergency use of the pesticide/insecticide Lufenuron on farmed fish to fight sea lice in the Clayoquot Sound, BC. I'd appreciate your help with a couple questions:

1. Why are fish farms resorting to the new pesticide Lufenuron to treat sea lice?
2. Have any human studies been conducted on the safety of ingesting fish that have been treated with Lufenuron?
3. Is the DFO monitoring/studying the effects lufenuron has the surrounding oceanic ecosystem? (specifically the effect on other crustaceans like crabs?)

**Deadline:** June 3, 2:30 PST

**Approved by:** Zac Waddington, Adrienne Paylor (in previous response)

#### Response:

##### 1. Why are fish farms resorting to the new pesticide Lufenuron to treat sea lice?

- The abundance of sea lice on marine salmon farms is influenced by seasonal and year-to-year variations in ocean salinity and temperature, as well as the number and species of wild salmon returning to an area.
- In Clayoquot sound over the winter/spring of 2017-2018, the typical drop in salinity that comes with rains did not occur. This higher salinity resulted in increased lice production in the region and exacerbated the lice levels on farms.
- Salmon farms in BC typically use the in-feed treatment emamectin benzoate (SLICE®) to treat sea lice. Historically, this has been very effective at controlling sea lice in BC.
- In early 2018, Fisheries and Oceans Canada (DFO) collected sea lice from Cermaq Canada's Bawden site in the Clayoquot area and sent them to the BC Centre for Aquatic Health Sciences for analysis, which confirmed emamectin benzoate (SLICE®) resistance.
- Health Canada issued an emergency drug release (EDR) to Cermaq Canada for the use of Lufenuron. Drugs used in salmon aquaculture are approved and managed by Health Canada.
- DFO was not involved in the application or review process for the Lufenuron EDR but we were notified by Cermaq Canada of its use in their sea lice mitigation plan. DFO supports the use of varied treatment applications to ensure that sea lice resistance to available drugs does not become a widespread problem. Varied treatment choices are consistent with a responsible integrated pest management approach to sea lice mitigation.

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- Lufenuron can protect fish from sea lice infestation for up to 6 to 9 months upon ocean entry, thus reducing reliance on and other treatments that may be stressful to fish.
- Would it be useful to add a bullet such as: It is beneficial to have multiple therapeutic options as well as non-chemical tools for treating sea lice, as this ensures that they remain effective as long as possible and decreases resistance challenges.

## **2. Have any human studies been conducted on the safety of ingesting fish that have been treated with Lufenuron?**

- Lufenuron is used widely and safely in veterinary medicine as a topical flea/parasite preventative for dogs and cats.
- Please contact Health Canada for further information.

## **3. Is the DFO monitoring/studying the effects lufenuron has the surrounding oceanic ecosystem? (specifically the effect on other crustaceans like crabs?)**

- When used to treat salmon, Lufenuron is not administered in the ocean environment. Rather, fish are treated in land-based, freshwater facilities prior to transfer to marine sites.
- Last year, Aquaculture Management partnered with our Science branch to take benthic samples of sediments near farms in Clayoquot Sound. Sediment was tested for the presence of a variety of therapeutants, including Lufenuron. Results are not yet back, although as this treatment occurs in the freshwater environment, it is expected that no Lufenuron will be present.
- DFO is developing a national post-deposit monitoring program under the Aquaculture Activities Regulations for aquaculture licence holders.
- Health Canada and Environment Canada would be the authorities who would determine the effects of Lufenuron to crustaceans.

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 3, 2019 11:31 AM  
**To:** Patirana, Anoma  
**Subject:** RE: Sea lice briefing note

I just have a couple of minor questions when you have a sec. Tx so much.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Sent:** Monday, June 3, 2019 11:21 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Wilkinson, Davida <Davida.Wilkinson@dfo-mpo.gc.ca>  
**Subject:** Sea lice briefing note

Hey Allison, here's the revised note for your final review before we get Davida to enter into the system.  
-Anoma

### **Anoma Patirana**

A/Regional Manager, Aquaculture Policy  
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Gestionnaire régionale intérimaire, Politique de l'aquaculture  
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[anoma.patirana@dfo-mpo.gc.ca](mailto:anoma.patirana@dfo-mpo.gc.ca) / Tél. : 604-666-9571

## **Patirana, Anoma**

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**From:** Webb, Allison  
**Sent:** June-03-19 2:06 PM  
**To:** Patirana, Anoma  
**Cc:** Wilkinson, Davida  
**Subject:** RE: Revised sea lice note (3 pages)  
**Attachments:** MTM\_proposed enhancements to sea lice management in BC\_June 3\_2019\_v4.aw.docx

Edits and good to go – please delete attachment. Not sure we need it at this point. If anything, the graphs would be more useful and we should consider adding those. Perhaps you, Adrienne and I should discuss while Davida is starting to put this into the system.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Sent:** Monday, June 3, 2019 1:07 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Wilkinson, Davida <Davida.Wilkinson@dfo-mpo.gc.ca>  
**Subject:** Revised sea lice note (3 pages)

Hey Allison, I've cut the down the note to 3 pages. It has one attachment which provides more information about the 2018/19 Clayoquot and Esperanza situation. Other than a shorter background section, everything remains the same.  
-Anoma

### **Anoma Patirana**

A/Regional Manager, Aquaculture Policy  
Fisheries and Oceans Canada, Pacific Region  
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Canada

Fisheries Management

Gestion des Pêches

Deputy Minister

Sous-ministre

**PROTECTED / SOLICITOR-CLIENT  
AND LITIGATION PRIVILEGE**

2019-xx-xxxx

**MEMORANDUM FOR THE MINISTER**

**PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH  
COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO THE MINISTER**

Sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, exceedances have been observed in two areas of the West Coast of Vancouver Island over the last two years.

This has led the Department to reconsider its current sea lice conditions of licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon outmigration window.

A number of proposed enhancements to current licence conditions are being considered including

DFO will engage Indigenous organizations, the Province of BC, Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the condition of licence (COL). If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance. The veracity of industry reported data is assured through DFO auditing. During the outmigration period, DFO increases sea lice audits to 50% of all active Atlantic salmon sites.

During most years, more than 90 percent of sites in British Columbia have been below the regulatory thresholds for sea lice during the wild salmon outmigration period, but can be variable and affected by environmental conditions, thriving in warm water temperatures and high salinity

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levels. However, in the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island (Esperanza in 2017 & 2019 and Clayoquot Sound in 2018 – refer to TAB 1 for additional information).

Currently, in BC sea lice management options for farmed fish are limited and generally rely on a single drug emamectin benzoate (SLICE), and one pesticide (hydrogen peroxide). SLICE resistance has been observed in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018). To date, SLICE resistance has not been observed by DFO in the Broughton Archipelago Area.

### **STRATEGIC CONSIDERATIONS**

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to open sea lice Conditions of Licence (COL) with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish moving between marine sites. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries, based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As sea lice management challenges have emerged in two areas of the west coast of Vancouver Island, DFO is considering a range of new amendments to COL to allow better regulation, while also providing additional tools and guidance to industry. These include moving to a more area based approach to sea lice management consistent with the new approach to aquaculture by DFO.

[REDACTED]

Implementing these improvements will require changing COL which can be achieved by demonstrating a conservation concern, or through a request to industry for voluntary consent to amend COL. A further assessment is required as well as consultation to inform the approach to opening the COL, however, it could be expected that industry would be amenable to making the request given the current public concern on these issue and the recent challenges on some of their farms. Given the need to open COL for some of the other suggested changes in the area of fish health, this could be done at one time.

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that have also increased the challenges regarding sea lice treatment. In the case of hydrogen peroxide, their current permit process is lengthy and requires public

consultation. [REDACTED]

[REDACTED] It will be  
important that any work in this area includes the BC Ministry of the Environment.

### **SCIENCE ADVICE**

Management has requested science advice on sea lice management with a focus on areas such as whether sea lice originating from Atlantic salmon farms impact wild salmonid populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in sockeye salmon, and mandatory fallowing. Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required.

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. The Department will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. The Department is prepared to continue its on-going briefings with you on this file, as requested.

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Timothy Sargent  
Deputy Minister

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Kevin Stringer  
Associate Deputy Minister

s.14  
s.21(1)(a)  
s.21(1)(b)

Attachment:

- 1) Summary of sea lice exceedances over threshold in Clayoquot Sound and Esperanza

### **Sea Lice Exceedances Over Threshold in Clayoquot Sound and Esperanza**

In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island. For example, in 2017 sea lice exceedances were observed in several Grieg farms in the Esperanza area and more recently, in 2019. In addition, in 2018 sea lice exceedances were observed for Cermaq farms in Clayoquot Sound.

Challenges resolving the Clayoquot situation in 2018 led to increased scrutiny of the Department and efforts by DFO staff to work with DFO's Conservation and Protection (C&P) to lay charges were unsuccessful. On March 1, 2019, C&P issued a warning letter to Cermaq as a result of the exceedances from last year, and to relay that the situation is being closely monitored by the Department.

This year, three Cermaq Canada marine finfish aquaculture sites in Clayoquot Sound were over threshold entering the outmigration period; however they met all conditions of licence within the timeframes provided. Subsequently all three of the sites have been, or are currently close to being, harvested out. Similarly in 2019, all three Grieg sites in Esperanza were over threshold entering the outmigration period. However, as a result of hydrogen peroxide treatment and harvesting, sea lice levels are currently under threshold. The sea lice management in Clayoquot Sound in 2018 and again this year has generated significant media attention.

DFO has been monitoring and analyzing sea lice data since 2011 for indication of SLICE resistance. DFO took samples of lice and was able to confirm that SLICE resistance was a contributing factor to the sea lice exceedances experienced in Clayoquot Sound in 2018 which was also compounded by unfavorable environmental conditions.

The rotational use of alternative methods is part of an integrated pest management (IPM) approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance while minimizing environmental impacts and risks to wild fish. The Province of BC, Industry and DFO are working together to explore IPM options.

**Page 452**  
**is a duplicate of**  
**est un duplicata de la**  
**page 442**

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 4, 2019 2:19 PM  
**To:** Levesque, Marie-Pier (DOJ)  
**Cc:** Ikejiani, Alexander (DOJ); House, Matthew (DOJ); Sharzer, Stephen (DOJ); Birba, Rose Gabrielle (DOJ)  
**Subject:** Re: Sea Lice BN

Thank you - [REDACTED] I will call to discuss when i'm back in the office next week.

Thanks Marie-Pier,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Lévesque, Marie-Pier  
**Sent:** Tuesday, June 4, 2019 1:48 PM  
**To:** Webb, Allison  
**Cc:** Ikejiani, Alexander (DOJ); House, Matthew (DOJ); Sharzer, Stephen (DOJ); Birba, Rose Gabrielle (DOJ)  
**Subject:** RE: Sea Lice BN

s.19(1)

s.21(1)(a)

s.21(1)(b)

[REDACTED] Allison. I will simply take note of it.

I understand that you are currently in transit to Halifax, [REDACTED]  
[REDACTED]

**Marie-Pier Lévesque**  
A/Senior Counsel | Avocate-conseil p.i.  
613-998-4781  
[marie-pier.levesque@justice.gc.ca](mailto:marie-pier.levesque@justice.gc.ca)

---

**From:** Webb, Allison [mailto:Allison.Webb@dfo-mpo.gc.ca]  
**Sent:** Tuesday, June 04, 2019 12:56 PM  
**To:** Lévesque, Marie-Pier <Marie-Pier.Levesque@justice.gc.ca>  
**Cc:** Ikejiani, Alexander <Alexander.Ikejiani@justice.gc.ca>; House, Matthew <Matthew.House@justice.gc.ca>; Sharzer, Stephen <Stephen.Sharzer@justice.gc.ca>  
**Subject:** Re: Sea Lice BN

Hi Marie-Pier - this was sent as a heads up for consideration as part of the comms announcements not for specific review. We have already revised and it is going thru approvals now [REDACTED]  
[REDACTED]  
[REDACTED]

Kind regards,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Lévesque, Marie-Pier  
**Sent:** Tuesday, June 4, 2019 7:52 AM  
**To:** Webb, Allison  
**Cc:** Ikejiani, Alexander (DOJ)  
**Subject:** FW: Sea Lice BN

Hi Allison,

Please keep me in the loop if you want this on my radar.

Thanks.

**Marie-Pier Lévesque**  
A/Senior Counsel | Avocate-conseil p.i.  
613-998-4781  
[marie-pier.levesque@justice.gc.ca](mailto:marie-pier.levesque@justice.gc.ca)

s.19(1)  
s.21(1)(a)  
s.21(1)(b)  
s.23

**From:** House, Matthew  
**Sent:** Tuesday, June 04, 2019 10:24 AM  
**To:** Ikejiani, Alexander <[Alexander.Ikejiani@justice.gc.ca](mailto:Alexander.Ikejiani@justice.gc.ca)>  
**Cc:** Lévesque, Marie-Pier <[Marie-Pier.Levesque@justice.gc.ca](mailto:Marie-Pier.Levesque@justice.gc.ca)>  
**Subject:** FW: Sea Lice BN

Matt

**From:** Webb, Allison [<mailto:Allison.Webb@dfo-mpo.gc.ca>]  
**Sent:** Saturday, June 01, 2019 6:04 PM  
**To:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Reid, Rebecca <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>; Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Lowe, Carmel <[Carmel.Lowe@dfo-mpo.gc.ca](mailto:Carmel.Lowe@dfo-mpo.gc.ca)>; MacDougall, Lesley <[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)>; House, Matthew <[Matthew.House@justice.gc.ca](mailto:Matthew.House@justice.gc.ca)>; Sharzer, Stephen <[Stephen.Sharzer@justice.gc.ca](mailto:Stephen.Sharzer@justice.gc.ca)>; McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Parsons, Jay <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>  
**Cc:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>  
**Subject:** Sea Lice BN

Hi all – Here's a first cut at a sea lice BN that we can put into the system on Monday for proper review and vetting. Big thanks to Anoma who came in with me today to do this.

It is cast as an info note for the Min – we are informing him that we intend to start engagement to open our COL (approved TBD) with an intent on revising these by 2020 before the next juvenile out migration window. Comms lines could support this if agreed. We also provide some indication of the types of changes that we would consider

preliminarily and how it would link to the ABM approach. Advice would be gathered from the TWG as well as other existing advisory processes. If our COL needs to be opened for the other improvements, both could be done together. (this is the Coles notes version of the note).

Also, FYI only and only my perspective, my team have been working on this for some time – not just this week or in response to the latest round of media. Workload related to ATIPs, litigation, etc has prevented some of these improvements to move forward, but we have and did have every intention of moving on this in 2019-2020 so are happy to package this with everything else and get moving.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)



## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 4, 2019 8:10 PM  
**To:** Wilkinson, Davida  
**Cc:** Delaney, Paula  
**Subject:** RE: Memo Proposed Enhancements to Sea Lice Management in BC Jun 03 2019

Hi Davida - Thanks for letting me know. We'll need to check for this all the time now.

You can add the following:

The purpose of this note is to highlight expected changes to sea lice management to be put in place by 2020 and the process by which this will be done, building on the new approach to aquaculture.

Not sure the rest of the bullets make sense with that so would need to see the whole thing.

I can check through the latest info note to the Minister and see if it's there. Anyway, might need some help in making these changes.

Thanks,  
Allison

---

**From:** Wilkinson, Davida  
**Sent:** June 4, 2019 11:44 AM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** Memo Proposed Enhancements to Sea Lice Management in BC Jun 03 2019

Hi Allison

I have had this Memo returned for editing. One of the edits I cannot make.

Could you rewrite the beginning sentence in the 'Summary of Advice to the Minister' box? It is to begin—'The purpose of this note is to.....' Apparently all notes are to begin this way. (We have also been advised, going forward) to change the Transfer Requests to read that way—Ginny is on it).

[REDACTED] but didn't know that it could wait until your return.

Davida Wilkinson  
Administrative Assistant  
Aquaculture Management Division  
Fisheries and Oceans Canada  
Suite 200 – 401 Burrard Street / 401 rue Burrard, station 200  
Vancouver, BC V6C 3S4 / Vancouver C.-B. V6C 3S4  
Phone/Telephone: (604) 666-9118  
Email: [davida.wilkinson@dfo-mpo.gc.ca](mailto:davida.wilkinson@dfo-mpo.gc.ca)

s.19(1)  
s.23

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 4, 2019 9:27 PM  
**To:** Wilkinson, Davida  
**Cc:** Delaney, Paula  
**Subject:** Sea lice BN

Other actions would require a change in the conditions of licence (COL) which can be done with consent from the industry or through DFO's authority for conservation purposes under s. 22(2) of the FGR.

This is the wording that should go into the section where we talk about how we can change the condition of licence.

Why don't you try to make the changes and then send it back to me and I'll play with it to finish it up or I can call and try to walk you through it?

Thanks,  
Allison

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 5, 2019 6:40 PM  
**To:** Wilkinson, Davida  
**Cc:** Delaney, Paula; Patirana, Anoma; Paylor, Adrienne  
**Subject:** Sea lice Briefing Note good to go with my revisions  
**Attachments:** Memo\_Proposed Enhancements to Sea Lice Management in BC\_June 5\_2019\_v4.docx

Please put this into approvals Davida. I have reviewed, edited and approve this version for Andy's review.

Thanks so much,  
Allison



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Fisheries Management

Gestion des Pêches

Deputy Minister

Sous-ministre

**PROTECTED / SOLICITOR-CLIENT  
AND LITIGATION PRIVILEGE**

2019-502-00157

**MEMORANDUM FOR THE MINISTER**

**PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH  
COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO THE MINISTER**

The purpose of this note is to highlight expected changes to sea lice management to be put in place in British Columbia by 2020 and the process by which this will be done.

Sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, exceedances have been observed in two areas on the West Coast of Vancouver Island over the last two years.

This has led Fisheries and Oceans Canada (DFO) to reconsider its current sea lice Conditions of Licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon outmigration window.

A number of proposed enhancements to current licence conditions are being considered to align with the new approach to aquaculture and support Area Based Management.

s.21(1)(a)

s.21(1)(b)

DFO will engage Indigenous organizations, the Province of British Columbia (BC), Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the COL. If there are sea lice exceedances during the outmigration period, licence holders are required to take

.../2

action to reduce lice abundance. The veracity of industry reported data is assured through DFO auditing. During the outmigration period, DFO increases sea lice audits to 50% of all active Atlantic salmon sites.

During most years, more than 90 per cent of sites in BC have been below the regulatory thresholds for sea lice during the wild salmon outmigration period, but can be variable and affected by environmental conditions, thriving in warm water temperatures and high salinity levels. However, in the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island (Esperanza in 2017 & 2019 and Clayoquot Sound in 2018).

Currently, in BC, sea lice management options for farmed fish are limited and generally rely on a single drug, emamectin benzoate (SLICE), and one pesticide (hydrogen peroxide). SLICE resistance has been observed in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018). To date, SLICE resistance has not been observed by DFO in the Broughton Archipelago Area.

### **STRATEGIC CONSIDERATIONS**

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to open sea lice COL with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries, based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As sea lice management challenges have emerged in two areas of the west coast of Vancouver Island, DFO is considering a range of new amendments to COL to improve management while providing additional tools and guidance to industry. These include moving to an area based management (ABM) approach for sea lice consistent with the new approach to aquaculture announced in December 2018. [REDACTED]

Other actions would require a change in the COL which can be done with consent from the industry or through DFO's authority for conservation purposes under s. 22 of the *Fishery General Regulations*. A further assessment based on consultation is required to inform the approach to opening the COL, however, it could be expected that industry would be amenable to making the request given the public concern on these issues and recent exceedances on some of their farms. Given the need to open COL for changes in the area of fish health [REDACTED] this could be done at one time.

s.19(1)  
s.21(1)(a)  
s.21(1)(b)

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that will impact how the range of tools for sea lice management. In the case

of hydrogen peroxide, their current permit process is lengthy and requires public consultation. [REDACTED]

[REDACTED] It will be important that any  
work in this area includes the BC Ministry of the Environment.

### **SCIENCE ADVICE**

Management has requested science advice on sea lice management with a focus on areas such as whether sea lice originating from Atlantic salmon farms impact wild salmonid populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in Sockeye salmon, [REDACTED] Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required. First Nations are also expected to participate in the TWG.

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. DFO will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. The DFO is prepared to continue its on-going briefings with you on this file, as requested.

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Timothy Sargent  
Deputy Minister

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Kevin Stringer  
Associate Deputy Minister

s.14

s.21(1)(a)

s.21(1)(b)

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Wednesday, June 5, 2019 6:45 PM  
**To:** Rainer, Michelle  
**Subject:** RE: For approval: Tyee questions on sea lice

Was sea lice included in the June 4th announcement? This wasn't agreed upon in any meetings I attended. I will go and double check the info before responding further.

---

**From:** Rainer, Michelle  
**Sent:** June 5, 2019 3:30 PM  
**To:** Webb, Allison  
**Subject:** For approval: Tyee questions on sea lice

Hi Allison,

I recalled a previous version sent an hour ago because AEO made some changes. Please ignore that if the recall didn't work, but just in case I've put the changes in red.

Please see below for your review; mostly previously approved stuff.

Thanks,  
Michelle

**Issue:** [REDACTED], the Tyee [REDACTED]. Reporter has questions about sea lice outbreaks in Clayoquot and the Broughton this year.

**Deadline:** June 6, noon PST

**Approved by:** Kerra Shaw, Howie Manchester, Adrienne Paylor

Will the DFO amend its COL to prevent companies from using harvesting, for example, as a treatment tool? To date industry has failed to manage sea lice epidemics and their impacts on wild salmon. Is the DFO going to change its protocols for managing sea lice?

- Licence conditions related to sea lice management can be found at: [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6). These conditions remain in effect until 2022. **approved**
- DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. This includes a review of licence conditions. **Approved**
- The Department is also developing an action plan to address the enforcement of sea lice regulations in coastal waters. **New (from June 4 announcement)**
- We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. **Approved**
- Harvesting remains an effective measure for reducing sea lice levels at salmon farms in BC. **new**

**Was Cermaq charged for failing to comply with licence conditions?**

s.19(1)

- DFO has reviewed Cermaq Canada's sea lice management practices in Clayoquot and, in March 2019, issued a warning letter to the company for violation of certain conditions of licence. In total, 7 compliance issues were found. **approved**
- DFO communicated closely with Cermaq Canada staff to ensure that the company was prepared for the 2019 wild salmon out migration period and managed sea lice levels through treatment, harvest or other appropriate measures. **approved**

**Will the DFO charge any companies for breaking its condition of licence based on exceedances in Clayquot Sound and the Broughton this year?**

- DFO's requirements are designed to ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. **Approved**
- Exceeding thresholds for sea lice is not a licence violation but a trigger to implement management measures to bring lice levels down. Failure to implement management measures to reduce sea lice levels is a licence violation. **New**
- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June. **new**
- Sea lice levels at the remaining 6 farms in the area are below threshold. **new**
- DFO is currently performing routine sea lice audits at Clayquot sites to verify the accuracy of industry-reported sea lice numbers and compliance with conditions of licence. Staff have so far completed sea lice audits at 5 of 8 sites and lice levels are very low in the 5 sites audited. **New**

**Does Cermaq currently have the technology, training and capacity to treat all farms in a timely manner for sea lice?**

- Cermaq Canada has invested in new technologies, such as a hydrolizer for mechanical removal of sea lice, and is using alternative drug treatments in the marine environment and in freshwater hatcheries prior to ocean transfer. Through these treatments and accelerated harvest, Cermaq has stayed in compliance throughout the 2019 outmigration period. Please contact the company for further information on training and investments. **new**
- We will continue to communicate with Cermaq Canada and other companies to ensure that licence requirements are understood and followed. **Approved**
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html). **approved**

**Sea lice have become a billion dollar problem for the salmon farming industry for which no effective controls exist. How does the DFO plan to address that issue?**

- There are many effective therapeutic and non-therapeutic treatment options to manage sea lice on farms in BC. DFO has been working with the province of BC and industry to develop alternative tools to manage sea lice. **approved**
- New treatment methodology, and husbandry practices are becoming widely adopted along the coast, which are reducing the reliance on SLICE to manage lice at sites. Some examples include: mechanical removal technologies



(e.g., hydrolizer), hydrogen peroxide treatment, area-based management (e.g., coordinated treatments, stocking and fallowing of sites in an area) and pre-treatment of smolts in the hatchery with anti-louse medication. **approved**

- The rotational use of these technologies is part of an Integrated Pest Management approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance. **approved**

**What impact does the DFO calculate that sea lice epidemics have had on population levels of wild salmon. Norwegian studies suggest an annual 10 percent mortality. What studies on mortality have the DFO done?**

- Scientist Simon Jones will answer this question in phone interview with reporter.

**Delaney, Paula**

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**From:** Parsons, Jay  
**Sent:** Thursday, June 6, 2019 7:27 AM  
**To:** Struthers, Alistair; Webb, Allison  
**Subject:** Fw: SEPA reg changes.  
**Attachments:** Scottish gov't introduces tougher lice regulations for farmers in 2020 \_ Undercurrent News.pdf

Fyi

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**From:** Hamoutene, Dounia <Dounia.Hamoutene@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 6, 2019 11:20 AM  
**To:** Parsons, Jay; Page, Fred H; Burgetz, Ingrid  
**Subject:** SEPA reg changes.

Of interest  
Thanks

Advertisement

X

Available at

<https://www.undercurrentnews.com/2019/06/06/scottish-govt-sepa-introduce-tougher-lice-regulations-for-farmers-in-2020/>

# Scottish gov't introduces tougher lice regulations for farmers in 2020

By Dan Gibson

June 6, 2019 09:29 BST



📷 Cabinet secretary for the rural economy Fergus Ewing delivers his statement to the Scottish Parliament on June 5

The Scottish government has introduced a range of measures designed to improve the transparency of data reporting from its many aquaculture facilities, following a 22-month work program.

Speaking to the Scottish Parliament on June 5, Scotland's cabinet secretary for the rural economy, Fergus Ewing, said the committee set up to look into conditions on Scotland's salmon farms had concluded that "maintaining the status quo was not an option".

**Pages 467 to / à 469  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

## **Wilkinson, Davida**

**From:** Paylor, Adrienne  
**Sent:** Thursday, June 6, 2019 8:25 AM  
**To:** Rainer, Michelle; Webb, Allison  
**Subject:** Re: For approval: Tyee questions on sea lice  
**Attachments:** IMG\_20190605\_201937.jpg

This is the quote I have....I'll check which media release this can from but I just thought we shouldn't be saying we won't change CoL until 2022 when we might do it sooner. Can we just stay neutral on it?

Sent from my BlackBerry 10 smartphone on the Bell network.

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**From:** Rainer, Michelle  
**Sent:** Thursday, June 6, 2019 8:13 AM  
**To:** Webb, Allison  
**Cc:** Paylor, Adrienne  
**Subject:** RE: For approval: Tyee questions on sea lice

Hi Adrienne,

Where did the quote come from? Was it in a media interview the Minister gave? I thought it was from the release but perhaps was elsewhere.

I have approval from Andy on the section you would like deleted (attached). Do you still want to delete?

Thanks,

Michelle

---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 5, 2019 6:53 PM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Cc:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: Tyee questions on sea lice

Hi Michelle - I double checked and the media release did not include these types of statements below re sea lice so they need to be deleted. I have some concerns about them that I won't get into, but essentially, we don't have approval yet on this work so can not include them in media lines. We are going through our formal processes to get endorsement, but will likely be a couple of weeks before we can say something of this nature.

I also see a line that Andy Thomson previously changed and didn't approve as I recall. All changes in highlights below.

Thanks,  
Allison

---

**From:** Rainer, Michelle  
**Sent:** June 5, 2019 3:30 PM  
**To:** Webb, Allison  
**Subject:** For approval: Tyee questions on sea lice

Hi Allison,

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Thanks,  
Michelle

Issue: [REDACTED] the Tyee [REDACTED]

Reporter has questions about sea lice outbreaks in Clayoquot and the Broughton this year.

Deadline: June 6, noon PST

Approved by: Kerra Shaw, Howie Manchester, Adrienne Paylor

**Will the DFO amend its COL to prevent companies from using harvesting, for example, as a treatment tool? To date industry has failed to manage sea lice epidemics and their impacts on wild salmon. Is the DFO going to change its protocols for managing sea lice?**

- Licence conditions related to sea lice management can be found at: [www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6](http://www.pac.dfo-mpo.gc.ca/aquaculture/licence-permis/docs/licence-cond-permis-mar/col-cdp-eng.html#6). These conditions remain in effect until 2022. **approved**
- DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit and surveillance program and considering options to improve our management of sea lice in BC. This includes a review of licence conditions. **Approved - delete this section**
- The Department is also developing an action plan to address the enforcement of sea lice regulations in coastal waters. **New (from June 4 announcement)**
- We continue to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. **Approved**

s.19(1)

- Harvesting remains an effective measure for reducing sea lice levels at salmon farms in BC. new

#### **Was Cermaq charged for failing to comply with licence conditions?**

- DFO has reviewed Cermaq Canada's sea lice management practices in Clayoquot and, in March 2019, issued a warning letter to the company for violation of certain conditions of licence. In total, 7 compliance issues were found. approved
- **DFO communicated closely with Cermaq Canada staff to ensure that the company was prepared for the 2019 wild salmon out migration period and managed sea lice levels through treatment, harvest or other appropriate measures. approved -- please check - Andy Thomson redrafted this previously and did not approve this version as I recall**

#### **Will the DFO charge any companies for breaking its condition of licence based on exceedances in Clayquot Sound and the Broughton this year?**

- DFO's requirements are designed to ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. Please see the attached infographic to learn how DFO manages sea lice at BC salmon farms. Approved
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- In 2019, 3 of 9 active sites in the Clayoquot Sound area were over the 3-motile threshold during the beginning of the outmigration period. Two of these sites have been harvested so there are no longer concerns with sea lice levels; the third is scheduled to complete harvest by mid-June. new
- Sea lice levels at the remaining 6 farms in the area are below threshold. new
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#### **Does Cermaq currently have the technology, training and capacity to treat all farms in a timely manner for sea lice?**

- Cermaq Canada has invested in new technologies, such as a hydrolicer for mechanical removal of sea lice, and is using alternative drug treatments in the marine environment and in freshwater hatcheries prior to ocean transfer. Through these treatments and accelerated harvest, Cermaq has stayed in compliance throughout the 2019 outmigration period. Please contact the company for further information on training and investments. new
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- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protège/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protège/parasites-eng.html). approved

**Sea lice have become a billion dollar problem for the salmon farming industry for which no effective controls exist. How does the DFO plan to address that issue?**

- There are many effective therapeutic and non-therapeutic treatment options to manage sea lice on farms in BC. DFO has been working with the province of BC and industry to develop alternative tools to manage sea lice. **approved**
- New treatment methodology, and husbandry practices are becoming widely adopted along the coast, which are reducing the reliance on SLICE to manage lice at sites. Some examples include: mechanical removal technologies (e.g., hydrolicer), hydrogen peroxide treatment, area-based management (e.g., coordinated treatments, stocking and fallowing of sites in an area) and pre-treatment of smolts in the hatchery with anti-lice medication. **approved**
- The rotational use of these technologies is part of an Integrated Pest Management approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance. **approved**

**What impact does the DFO calculate that sea lice epidemics have had on population levels of wild salmon. Norwegian studies suggest an annual 10 percent mortality. What studies on mortality have the DFO done?**

- Scientist Simon Jones will answer this question in phone interview with reporter.



f Canada takes further action to enhance aquaculture sustainability in Briti

Government of Canada is moving forward on dev  
tion plan to address the enforcement of sea lice  
ations in coastal waters. We are committed to ta  
and strong enforcement to ensure that compa  
siness on the ocean follow the rules and guidel  
ed in regulations, legislation and their license c

## **Webb, Allison**

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**From:** Webb, Allison  
**Sent:** Thursday, June 6, 2019 9:12 AM  
**To:** Rainer, Michelle  
**Cc:** Paylor, Adrienne  
**Subject:** Re: For approval: Tyee questions on sea lice

Please delete. The Min statement T doesn't included this. Thx.

Sent from my BlackBerry 10 smartphone on the Bell network.

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**From:** Rainer, Michelle  
**Sent:** Thursday, June 6, 2019 12:13 PM  
**To:** Webb, Allison  
**Cc:** Paylor, Adrienne  
**Subject:** RE: For approval: Tyee questions on sea lice

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**Sent:** Wednesday, June 5, 2019 6:53 PM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Cc:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Subject:** RE: For approval: Tyee questions on sea lice

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- We will continue to communicate with Cermaq Canada and other companies to ensure that licence requirements are understood and followed. **Approved**
- Most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. Results of both industry sea lice counts and DFO audits are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html). **approved**

**Sea lice have become a billion dollar problem for the salmon farming industry for which no effective controls exist. How does the DFO plan to address that issue?**

- There are many effective therapeutant and non-therapeutant treatment options to manage sea lice on farms in BC. DFO has been working with the province of BC and industry to develop alternative tools to manage sea lice. **approved**
- New treatment methodology, and husbandry practices are becoming widely adopted along the coast, which are reducing the reliance on SLICE to manage lice at sites. Some examples include: mechanical removal technologies (e.g., hydrolicer), hydrogen peroxide treatment, area-based management (e.g., coordinated treatments, stocking and fallowing of sites in an area) and pre-treatment of smolts in the hatchery with anti-louse medication. **approved**
- The rotational use of these technologies is part of an Integrated Pest Management approach, which has been demonstrated to reduce the need for drugs/pesticides and prevent the development of resistance. **approved**

**What impact does the DFO calculate that sea lice epidemics have had on population levels of wild salmon. Norwegian studies suggest an annual 10 percent mortality. What studies on mortality have the DFO done?**

- Scientist Simon Jones will answer this question in phone interview with reporter.

## Webb, Allison

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**From:** Webb, Allison  
**Sent:** Thursday, June 6, 2019 7:47 PM  
**To:** Johal, Sharan; Thomson, Andrew  
**Cc:** Barton, Meagan; Girouard, Louise; Bate, Dan  
**Subject:** Re: Info Requested: Min brief item - Sea Lice action plan/enforcement / potential announcement next week

Hi there - briefing note is already in the system for the Minister on this. It is likely with Andy or Rebecca at this time so is enroute to the Minister now.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Johal, Sharan  
**Sent:** Thursday, June 6, 2019 4:10 PM  
**To:** Thomson, Andrew; Webb, Allison  
**Cc:** Barton, Meagan; Girouard, Louise; Bate, Dan  
**Subject:** Info Requested: Min brief item - Sea Lice action plan/enforcement / potential announcement next week

Hi Andy, are you able to advise me who's the lead on the sea lice action plan? I'm thinking FM with input from Science and C&P?

Thanks

Sharan Johal  
Tel : 604-666-7102 / Fax : 604-666-8956  
[sharan.johal@dfo-mpo.gc.ca](mailto:sharan.johal@dfo-mpo.gc.ca)

**From:** Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 6, 2019 10:43 AM  
**To:** Fogliato, Cara <Cara.Fogliato@dfo-mpo.gc.ca>; McGill, Stephanie <Stephanie.McGill@dfo-mpo.gc.ca>; Richter, Julie <Julie.Richter@dfo-mpo.gc.ca>; Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>  
**Cc:** Jarjour, Jasmine <Jasmine.Jarjour@dfo-mpo.gc.ca>  
**Subject:** FW: Min brief item - Sea Lice

See the note below from MinO.

I'm not sure if there is work underway already on this or not, or even really who would take the lead. Maybe a first step is to get a bit of an update on where we're at on the development of this action plan or response to the sea lice outbreak and then we can talk about realistic timelines for a Min/DM and a possible announcement.

**From:** Hill, Johanna <Johanna.Hill@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 6, 2019 8:46 AM  
**To:** Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>; Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>  
**Cc:** Jarjour, Jasmine <Jasmine.Jarjour@dfo-mpo.gc.ca>; Barker, Tyler <Tyler.Barker@dfo-mpo.gc.ca>  
**Subject:** Min brief item - Sea Lice

Good morning,

Following the Min brief on the 31<sup>st</sup>, we committed to providing an action plan on sea lice, including what can be said publicly on enforcement. I'm told now that the Minister is hoping to be able to make this announcement next week. In order to accommodate, Mino would like this added to the Min/DM early next week. Not sure what state the action plan is in, or if it would be ready for a briefing slot next week. If the action plan itself isn't ready, perhaps we can offer an update, and a discussion on what can be announced at this stage?

Maybe we can add this to the list of things to discuss during our policy chat later today.

Thanks, Johanna

No information has been removed or severed from this page

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, June 7, 2019 7:05 AM  
**To:** Struthers, Alistair; McCorquodale, Brenda; Delaney, Paula  
**Cc:** Dostal, Alexandra  
**Subject:** Re: Sea lice note

Paula - could you please send this note up to Alix for us (the info note going to the Min)?

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

Original Message

**From:** Struthers, Alistair  
**Sent:** Friday, June 7, 2019 10:16 AM  
**To:** Webb, Allison; McCorquodale, Brenda  
**Cc:** Dostal, Alexandra  
**Subject:** FW: Sea lice note

Hi you two,

Would one of you be able to flip the sea lice note to Alix, please and thanks. She would like an early version to dig into and get a better understanding.

Thanks,

Alistair

-----Original Message-----

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Friday, June 7, 2019 9:14 AM  
**To:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Medeiros, Dean <Dean.Medeiros@dfo-mpo.gc.ca>; Saumur-Kelly, Maude <Maude.Saumur-Kelly@dfo-mpo.gc.ca>; Kennedy, Lori <Lori.Kennedy@dfo-mpo.gc.ca>; Beckford, Ebonie <Ebonie.Beckford@dfo-mpo.gc.ca>  
**Subject:** Sea lice note

Hi alistair- [REDACTED] I was wondering if someone from the team might be willing to ask pacific for the draft sea lice action plan they are drafting so I can read it before official approvals? DMO was asking about it yesterday. I understand it is with the rdg so it would be useful to confirm that and timing. Thx!  
Sent from my iPhone

s.19(1)

## Patirana, Anoma

---

**From:** Delaney, Paula  
**Sent:** June-07-19 2:15 PM  
**To:** Patirana, Anoma; Webb, Allison  
**Subject:** FW: 2019-502-00157 - Workable updated by RDGs office Sea Lice Memo  
**Attachments:** Memorandum - 2019-502-00157.docx

Hi Allison and Anoma,  
Please note the RDG has requested a table to be attached to the note.  
We are returning this note w/ comments from Rebecca:

"Andy – would you please create an attached table to show the changes from current to proposed and timeline for implementation. This will help show the specific actions"

**Please submit your up to date memo by Monday June 10<sup>th</sup> COB.**

Thank you, Paula

**From:** Johal, Rauvyn <Rauvyn.Johal@dfo-mpo.gc.ca>  
**Sent:** Friday, June 7, 2019 1:08 PM  
**To:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** FW: Returning w/ edits from RR - 2019-502-00157 - Proposed Enhancements to Sea Lice Management in British Columbia

Hi Paula,

Sea Lice has been sent back because Rebecca would like a table attached. Please submit this by **9:00 am Monday June 10<sup>th</sup>.**

Thank you!

Rauvyn Johal  
Administrative Officer Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
200-401 Burrard Street, Vancouver BC, V6C 3S4  
[rauvin.johal@dfo-mpo.gc.ca](mailto:rauvin.johal@dfo-mpo.gc.ca) | Tel : 604-666-8287

**From:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <[DFO.PAC\\_RDGExecCorrespondence-ExecCorrespondenceDGR\\_PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC_RDGExecCorrespondence-ExecCorrespondenceDGR_PAC.MPO@dfo-mpo.gc.ca)>  
**Sent:** June-07-19 12:48 PM  
**To:** Mauro, Richard <[Richard.Mauro@dfo-mpo.gc.ca](mailto:Richard.Mauro@dfo-mpo.gc.ca)>; Johal, Rauvyn <[Rauvyn.Johal@dfo-mpo.gc.ca](mailto:Rauvyn.Johal@dfo-mpo.gc.ca)>  
**Cc:** Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>; Johal, Sharan <[Sharan.Johal@dfo-mpo.gc.ca](mailto:Sharan.Johal@dfo-mpo.gc.ca)>; Fogliato, Cara <[Cara.Fogliato@dfo-mpo.gc.ca](mailto:Cara.Fogliato@dfo-mpo.gc.ca)>  
**Subject:** Returning w/ edits from RR - 2019-502-00157 - Proposed Enhancements to Sea Lice Management in British Columbia

Hi FM,

We are returning this note w/ comments from Rebecca:



"Andy – would you please create an attached table to show the changes from current to proposed and timeline for implementation. This will help show the specific actions"

**Please submit your up to date memo by Monday June 10<sup>th</sup> COB.**

Thanks,

**Ashley Church**

Correspondence Officer | Agente de correspondance  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Telephone | Téléphone (604) 666-3303  
DFO.PAC RDGExecCorrespondence-ExecCorrespondenceDGR PAC.MPO@dfo-mpo.gc.ca

---

**From:** Johal, Rauvyn <Rauvyn.Johal@dfo-mpo.gc.ca>  
**Sent:** Friday, June 7, 2019 9:14 AM  
**To:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** 2019-502-00157 - Workable updated by RDGs office

Hi Paula,

Ashley had some edits, the most up to date workable is attached.

Thank you,

Rauvyn Johal

Administrative Officer Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
200-401 Burrard Street, Vancouver BC, V6C 3S4  
rauvin.johal@dfo-mpo.gc.ca | Tel : 604-666-8287

**From:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC RDGExecCorrespondence-ExecCorrespondenceDGR PAC.MPO@dfo-mpo.gc.ca>  
**Sent:** June-07-19 9:12 AM  
**To:** Johal, Rauvyn <Rauvyn.Johal@dfo-mpo.gc.ca>  
**Cc:** Mauro, Richard <Richard.Mauro@dfo-mpo.gc.ca>; Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>  
**Subject:** RE: 2019-502-00157

I made a tweak to the header and changed some spacing on the pages. This is the most up to date workable of the memo

**Ashley Church**

Correspondence Officer | Agente de correspondance  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Telephone | Téléphone (604) 666-3303  
DFO.PAC RDGExecCorrespondence-ExecCorrespondenceDGR PAC.MPO@dfo-mpo.gc.ca



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Deputy Minister

Sous-ministre

**PROTECTED B**  
**SOLICITOR-CLIENT / LITIGATION PRIVILEGE**

2019-502-00157

**MEMORANDUM FOR THE MINISTER**

**PROPOSED ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH  
COLUMBIA  
(FOR INFORMATION)**

**SUMMARY OF ADVICE TO THE MINISTER**

The purpose of this note is to highlight expected changes to sea lice management to be put in place in British Columbia by 2020 and the process by which this will be done.

Sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, exceedances have been observed in two areas on the West Coast of Vancouver Island over the last two years.

This has led Fisheries and Oceans Canada (DFO) to reconsider its current sea lice Conditions of Licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon outmigration window.

A number of proposed enhancements to current licence conditions are being considered to align with the new approach to aquaculture and support Area Based Management. [REDACTED]

DFO will engage Indigenous organizations, the Province of British Columbia (BC), Industry and conservation groups on the proposed approach for enhancing sea lice management and regulation via the multi-stakeholder technical working group (TWG) on Fish Health and/or other existing forums.

**BACKGROUND**

Due to elevated risk to juvenile wild salmon during their outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish) are exceeded as part of the COL. If there are sea lice exceedances during the outmigration period, licence holders are required to take

action to reduce lice abundance. The veracity of industry reported data is assured through DFO auditing. During the outmigration period, DFO increases sea lice audits to 50 per cent of all active Atlantic salmon sites.

During most years, more than 90 per cent of sites in BC have been below the regulatory thresholds for sea lice during the wild salmon outmigration period, but can be variable and affected by environmental conditions, thriving in warm water temperatures and high salinity levels. However, in the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island (Esperanza in 2017 & 2019 and Clayoquot Sound in 2018).

Currently, in BC, sea lice management options for farmed fish are limited and generally rely on a single drug, emamectin benzoate (SLICE), and one pesticide (hydrogen peroxide). SLICE resistance has been observed in four areas in BC (Klemtu in 2013, Quatsino in 2014, Esperanza in 2016/2017 and Clayoquot 2018). To date, SLICE resistance has not been observed by DFO in the Broughton Archipelago Area.

## **STRATEGIC CONSIDERATIONS**

Given the recent emergence of sea lice exceedances in several areas of the BC coast, DFO intends to open sea lice COL with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.

Conservation groups and [REDACTED] have questioned the enforceability and integrity of current sea lice COL and how the Department plans to consider drug resistance in sea lice prior to issuing transfer licences for farmed fish. Concerns by these groups and members of the public regarding DFO's sea lice management has led to negative and increased media inquiries, based on documentation gathered through an Access to Information request where various departmental officials highlight some of their concerns with the current approach.

As sea lice management challenges have emerged in two areas of the west coast of Vancouver Island, DFO is considering a range of new amendments to COL to improve management while providing additional tools and guidance to industry. These include moving to an area based management (ABM) approach for sea lice consistent with the new approach to aquaculture announced in December 2018. [REDACTED]

Proposed changes will also be informed by new regulations introduced in Norway and Scotland.

Other actions would require a change in the COL which can be done with consent from the industry or through DFO's authority for conservation purposes under S. 22 of the *Fishery General Regulations*. A further assessment based on consultation is required to inform the approach to opening the COL, however, it could be expected that industry would be amenable to making the request given the public concern on these issues and recent exceedances on some of their farms. Given the need to open COL for changes in the area of fish health [REDACTED] this could be done at one time.

s.19(1)

s.21(1)(a)

s.21(1)(b)

BC has recently changed some of their requirements and approval processes for use of other alternative treatments that will impact how the range of tools for sea lice management. In the case of hydrogen peroxide, their current permit process is lengthy and requires public consultation.

It will be important that any work in this area includes the BC Ministry of the Environment.

### **SCIENCE ADVICE**

Management has requested science advice on sea lice management with a focus on areas such as whether sea lice originating from Atlantic salmon farms impact wild salmonid populations, correlation between sea lice in juvenile wild smolts and farm lice levels, identifying threshold of sea lice infection and resilience in Sockeye salmon, and mandatory fallowing. Science advice on these regulatory questions will help inform proposed amendments to sea lice COL.

### **INDIGENOUS CONSULTATIONS**

DFO will engage with Indigenous organizations such as the Aquaculture Coordinating Committee of the First Nations Fisheries Council and/or bilateral meetings with interested First Nations as required. First Nations are also expected to participate in the TWG.

### **EXTERNAL CONSULTATIONS**

DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish. DFO will consult with BC, Industry and environment groups, and academia on proposed amendments to sea lice COL through the multi-stakeholder TWG.

### **ADVICE AND RECOMMENDATIONS TO THE MINISTER**

Departmental officials will continue to work to refine its proposed enhancements to sea lice management in the coming months. DFO is prepared to continue its on-going briefings with you on this file, as requested.

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Timothy Sargent  
Deputy Minister

---

Kevin Stringer  
Associate Deputy Minister

s.14

s.21(1)(a)

s.21(1)(b)

**Webb, Allison**

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**From:** Webb, Allison  
**Sent:** Sunday, June 9, 2019 8:58 PM  
**To:** Patirana, Anoma; McCorquodale, Brenda; Paylor, Adrienne

Hi you three - sorry that I was off line and didn't see the requests for the sea lice note etc. I'll go in early tomorrow and finish it off.

Brenda - don't expect you to be able to participate @ our mgrs meeting this week with your conflicting priorities. We will focus on fish health and important to spend some time together to reconnect after all the craziness of the past few weeks.

Thanks for helping out [REDACTED]

Talk soon and  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

s.19(1)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 10, 2019 8:51 AM  
**To:** Dostal, Alexandra  
**Subject:** RE: Sea lice

Sorry, just to clarify that the note is coming back up through approvals today. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Monday, June 10, 2019 3:27 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea lice

Hi Allison,

I wanted to touch base with you quickly on the sea lice note- I know it will come through our shop for views sometime but I wanted to mention one quick question – do you think it might be possible to add a bit more clarity on options being considered and timing for opening COLs? [REDACTED].

What do you think?

## **Alix Dostal**

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
Government of Canada | Gouvernement du Canada

s.19(1)  
s.21(1)(a)  
s.21(1)(b)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Monday, June 10, 2019 8:51 AM  
**To:** Dostal, Alexandra  
**Subject:** RE: Sea lice

I need to chat to you about this, but not now. We are on a deadline of 10 min from now. I'll try to call later. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Monday, June 10, 2019 3:27 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea lice

Hi Allison,

I wanted to touch base with you quickly on the sea lice note- I know it will come through our shop for views sometime but I wanted to mention one quick question – do you think it might be possible to add a bit more clarity on options being considered and timing for opening COLs? [REDACTED]

What do you think?

## Alix Dostal

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
Government of Canada | Gouvernement du Canada

s.19(1)  
s.21(1)(a)  
s.21(1)(b)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 10, 2019 11:21 AM  
**To:** Barton, Meagan; Delaney, Paula  
**Cc:** Johal, Rauvyn  
**Subject:** RE: 2019-502-00157 Proposed Enhancements to Sea Lice Mgmt in BC

No worries. Go team!

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>  
**Sent:** Monday, June 10, 2019 11:12 AM  
**To:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Johal, Rauvyn <[Rauvyn.Johal@dfo-mpo.gc.ca](mailto:Rauvyn.Johal@dfo-mpo.gc.ca)>  
**Subject:** RE: 2019-502-00157 Proposed Enhancements to Sea Lice Mgmt in BC

Thanks for whipping this together! It's with RDGO.

Thanks,

### **Meagan Barton**

Executive Assistant to the Regional Director Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tel : 604-666-0753

Adjointe exécutive au Directeur Régionale, Direction de la gestion des pêcheries  
Pêches et Océans Canada | Gouvernement du Canada  
[meagan.barton@dfo-mpo.gc.ca](mailto:meagan.barton@dfo-mpo.gc.ca) | Tél : 604-666-0753

**From:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Sent:** June-10-19 10:09 AM  
**To:** Johal, Rauvyn <[Rauvyn.Johal@dfo-mpo.gc.ca](mailto:Rauvyn.Johal@dfo-mpo.gc.ca)>; Barton, Meagan <[Meagan.Barton@dfo-mpo.gc.ca](mailto:Meagan.Barton@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** FW: 2019-502-00157 Proposed Enhancements to Sea Lice Mgmt in BC  
**Importance:** High

Please find the Proposed Enhancement to Sea Lice Management in BC attached above. This memo has been signed by Allison Webb and has been forwarded to Rauvyn for RD FM and RDGO approvals.  
Thank you, Paula



## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 10, 2019 2:59 PM  
**To:** Dostal, Alexandra  
**Subject:** RE: Qs and As on sea lice

Hi Alix - No, but you can check with Comms as I think that I might have seen something of this nature previously. We are not able to start any at this time though. Comms has tons of material from which to work, however, if Philippe would like them done and they could support this if it's necessary.

I think that we should invest our efforts on the engagement/consultation piece and developing robust options for improvements for now.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Monday, June 10, 2019 2:49 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Subject:** Qs and As on sea lice

Philippe was asking me today if we had any – I haven't seen any I don't think, but have any of you prepared or seen any?

Thx!

Alix

## **Alix Dostal**

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
Government of Canada | Gouvernement du Canada

**Fenton, AJ**

---

**To:** Fenton, AJ  
**Subject:** RE: RE: 2018 Finfish annual report

-----Original Appointment-----

**From:** Fenton, AJ  
**Sent:** Tuesday, June 11, 2019 9:30 AM  
**To:** Fenton, AJ; Webb, Allison  
**Subject:** RE: 2018 Finfish annual report  
**When:** Tuesday, June 11, 2019 1:00 PM-1:30 PM (UTC-08:00) Pacific Time (US & Canada).  
**Where:**

Hi Allison, do you have 10 mins today to chat about the report this afternoon? I wanted to discuss/clarify some of your comments.

- 1) Info note – is this to notify the RDG of the final product? Or would you like it to go to Minister.
- 2) CAP info missing – is CAP the Canadian Aquaculture Strategy?
- 3) Sea lice section – Has marked “for discussion” – this section has been revised by Sarah and Zac several times which does not show up on the print version just so you’re aware.
- 4) Photos with Jackets – I just took another look through and at some of the newer pictures which we are going to use to replace some of the Howie pics. However, none of them have the staff wearing their jackets. It seems that they are not wearing them in most of the “Action shots” – perhaps too hot, or they have other gear they prefer? I will try to search for something we can include which shows the jacket. So far the ones we have that do are relatively obscured and hard to see the logo.


Thanks very much,  
A.J.

---

**From:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>  
**Sent:** Tuesday, June 11, 2019 7:04 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Sandberg, Krista <[Krista.Sandberg@dfo-mpo.gc.ca](mailto:Krista.Sandberg@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>  
**Subject:** Re: 2018 Finfish annual report

Thanks Allison. Appreciate your feedback! We will work to get this all wrapped up and translated very soon.

Sincerely,

A.J. Fenton  


s.16(2)(c)

----- Original message -----

From: "Webb, Allison" <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

Date: 2019-06-10 18:47 (GMT-08:00)

To: "Fenton, AJ" <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>

Cc: "Sandberg, Krista" <[Krista.Sandberg@dfo-mpo.gc.ca](mailto:Krista.Sandberg@dfo-mpo.gc.ca)>, "Patirana, Anoma" <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>

Subject: RE: 2018 Finfish annual report

I have some comments for you Aj. I was finally able to review the document on my long plane ride last week. I'll leave it on your chair, but come and see me if you wish to discuss.

I think that it looks incredibly better than previous years and appreciate all the work that has been done. Really good effort. I look forward to sharing this up the line.

One minor comment that I was disappointed with was that we have thousands of dollars of new photos where we are wearing our jackets and those were not used. I would really like to correct that for this document if at all possible.

Some other comments for consideration on your chair.

Thanks again to you and Krista – well done,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>

**Sent:** Thursday, May 16, 2019 10:22 AM

**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Subject:** 2018 Finfish annual report

Hi Allison,

I gave you the paper copy and all comments so far for your convenience but here is the digital version also. Not sure which you prefer but it might be easier to see the comments in context with the digital.

Once you've reviewed, we hope to send all changes including your comments to the designer to create the final English version, which we can then send to translation.

Cheers,

**A.J. Fenton**

Data Systems Coordinator, Aquaculture Policy  
Fisheries and Oceans Canada, Pacific Region  
[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca) / Tel: 604-666-9364

Coordinateur de systèmes de données, politique de l'aquaculture  
Pêches et Océans Canada, région du Pacifique

[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca) / Tél. : 604-666-9364



Government  
of Canada

Gouvernement  
du Canada

Canada

No information has been removed or severed from this page

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Tuesday, June 11, 2019 4:22 PM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** updated Draft\_Reply\_2019-001-01245.docx  
**Attachments:** MECTS-#4052529-v5-Draft\_Reply\_2019-001-01245.docx; MECTS-#4052402-v1-Main\_Docs\_2019-001-01245.PDF

**Importance:** High

Hi Allison. Ottawa correspondence asked if we can address the two questions on page 2.

We had addressed question 1 (I bolded the sentence to bring it to their attention.)

For question 2, Adrienne added the yellow highlighted paragraph.

We're looking for your approval on this draft response **as soon as possible**.

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

Your review should also include technical accuracy and consistency with policy direction.

**If you think someone else in Pacific Region or in Legal Services** must approve and they aren't on our approval list, **please advise us ASAP and we will forward the documents for their approval.**

Thanks,  
Candace

**\*\*Please direct all e-mails regarding Minister's (001) and RDG's (501) correspondence to XPAC PRMCU.\*\***

Candace McGuire, Heather Fowlie & Alison Jacques

Managers, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
XPACPRMCU@dfo-mpo.gc.ca Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada/Gouvernement du Canada  
XPACPRMCU@dfo-mpo.gc.ca Tel 604-666-0823

## Ministerial Correspondence / Correspondance ministérielle Approval Form / Formulaire d'approbation

MCCU DOCKET # / N° DU DOSSIER UCCM : 2019-001-01245	MCCU CONTACT / RESPONSABLE À L'UCCM : BARBARA MALONEY EDITOR : SM
REPLY BY MINO / RÉPONSE DU MINISTRE	

Commented [MC1]:

### DATE AND DEADLINES / DATE ET ÉCHÉANCE

DUE DATE TO MINO / ÉCHÉANCE AU CM : (mm-dd-yyyy / mm-jj-aaaa)	06/13/2019	DATE RECEIVED IN MCCU / DATE DE RÉCEPTION À L'UCCM : (mm-dd-yyyy / mm-jj-aaaa)	05/15/2019
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### COMMENTS / APPROACH – COMMENTAIRES / APPROCHE

For MCU Analyst: Please send reply electronically.

### APPROVALS / APPROBATIONS

Level / Niveau	Name, Title and Sector / Nom, titre et secteur	Assigned Date / Date fixée	Date Due / Échéance	Date Approved / Date d'approbation	Changes / Modifications
Director / Directeur(trice)	Allison Webb Director, Aquaculture Management Div., Fisheries Management Branch			May 28, 2019	Yes
Regional Director / Directeur(trice) régional(e)	Andrew Thomson Regional Director, Fisheries Management Branch			June 4, 2019	
IF NECESSARY / SI NÉCESSAIRE					
Regional Director General / Directeur(trice) général régional(e)	Rebecca Reid, Regional Director General, Pacific Region			June 5, 2019	
Director General	Alexandra Dostal, Director General, Aquaculture Management, AE				
ADM / RDG / DC / CO / AC SMA / DGR / SA / BC / CA	Philippe Morel, Assistant Deputy Minister, Aquatic Ecosystems				
Legal / Services juridiques IGA / AI	Stephen Sharzer, Senior General Counsel and Head, Legal Services				
IF / SI PROVINCIAL / TERRITORIAL					
DM / SM					
PCO / BCP					

s.21(1)(a)

s.21(1)(b)

s.23

### OTHER CONSULTATIONS / AUTRES CONSULTATIONS

INFO COPIES TO / COPIES POUR INFORMATION À (Office, Branch, Date / Bureau, direction, date)	DEVELOPED WITH SME(S) OR OTHER STAKEHOLDER(S) / ÉLABORÉ AVEC EXPERT(S) EN LA MATIÈRE OU AUTRE(S) INTERVENANT(S) (Name, Title, Branch, Date / Nom, titre, direction, date)
	<ul style="list-style-type: none"> <li>Manager, Ministerial Correspondence, Pacific Region</li> <li>Adrienne Paylor, Regional Manager, Aquaculture Environmental Operations, Fisheries Management (Changes, May 21, 2019)</li> </ul>
OGD / AMG - (Name, Title, Branch, Date / Nom, titre, direction, date)	

### FOR MCCU USE / RÉSERVÉ À L'UCCM

b.c.c. / Cci - (Name, Department / Nom, ministère)	c.c. - (Name, email address / contact info / Nom, courriel, coordonnées)
--	--

- 2 -

<ul style="list-style-type: none"><li>• PAC MCU</li><li>• Adrienne Paylor (DFO)</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>
ATTACHMENTS TO RESPONSE / PIÈCES JOINTES À LA RÉPONSE	
<ul style="list-style-type: none"><li>•</li></ul>	

For MCU Analysts : Please send reply by email to < [REDACTED] >

s.19(1)

[REDACTED]  
Barrister & Solicitor

Barrister & Solicitor  
Ecojustice  
390-425 Carrall Street  
Vancouver BC V6B 6E3

[REDACTED]  
Thank you for your correspondence of May 13, 2019, regarding sea lice in British Columbia.

Commented [MB2]: Should we insert "on behalf of [REDACTED]"

Fisheries and Oceans Canada (DFO) shares your concern for wild salmon. DFO fish health specialists and veterinarians conduct more than 160 fish health and sea lice audits each year on net pen salmon farms operating in British Columbia's marine environment. Diagnostic services are provided by an accredited animal health laboratory.

Commented [MB3]: Or [REDACTED]

In addition, DFO biologists conduct random inspections. DFO biologists also conduct inspections at freshwater hatcheries where salmon are destined for marine net pens. During these inspections, DFO auditors review documents, practices, biosecurity, and husbandry to monitor compliance with licence conditions.

Sea lice populations are affected by environmental conditions and thrive in warm water temperatures and high salinity levels. During most years, more than 90 percent of sites in British Columbia are below the regulatory thresholds (three motile sea lice per farmed fish) for sea lice during the wild salmon out-migration period from March 1 to June 30 of each year.

The Department is working to ensure that aquaculture practices consider, assess, and mitigate impacts on the environment. This work includes updating DFO's risk management framework for aquaculture, which will embody a clear understanding of unacceptable harm. The update will embrace precautionary approaches where uncertainty exists and will fully engage the public and Indigenous peoples. DFO has also initiated a Study on the state of salmon aquaculture technology, with respect to alternative technologies including closed containment aquaculture.

s.19(1)

DFO takes an adaptive management approach to aquaculture. We are examining data from our fish health audit program and considering a range of options to improve management of sea lice in British Columbia. **This includes reviewing licence conditions and considering how sea lice management will nest within an area-based management approach.**



- 2 -

DFO closely tracks industry reports and the data generated by our sea lice auditing program to identify trends or challenges with sea lice management on farms or in a given area. This information is used by DFO veterinarians when making their recommendations regarding fish transfers under Section 56 of the Fishery General Regulations.

DFO continues to work with the Province of British Columbia on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish.

I believe we can continue to encourage greater sustainability in aquaculture and to support the recovery of wild salmon. Thank you for writing.

Yours sincerely,

Jonathan Wilkinson, P.C., M.P.  
Minister of Fisheries, Oceans and the Canadian Coast Guard

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 12, 2019 5:02 PM  
**To:** Thomson, Andrew; Reid, Rebecca  
**Subject:** RE: Sea Lice Table  
**Attachments:** Sea Lice Table.aw.docx

Some suggested edits for your consideration. Please take a look at the suggestions re FN involvement.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 12, 2019 4:24 PM  
**To:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea Lice Table

I took Alix's table concept and filled it in. I think we should simplify that we need stronger lice regulations and not try to make up a 20 part plan.

I wrote the science advice piece - so Arran or Carmel should review / revise.

Andrew J L Thomson

Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada

Suite 200 – 401 Burrard St.  
Vancouver, BC, Canada V6C 3S4  
[andrew.thomson@dfo-mpo.gc.ca](mailto:andrew.thomson@dfo-mpo.gc.ca)  
Telephone | Téléphone 604.666.0751  
Facsimile | Télécopieur 250.666.8069  
Government of Canada | Gouvernement du Canada

June 12, 2019

# SEA LICE

<b>State of Play on Sea lice</b>	Sea Lice infestations on farms were the major detrimental effect of aquaculture cited by ENGOs in the Mid-2000s. The issue prompted significant research efforts by DFO and changes to the provincial aquaculture regulations. The 2010 DFO aquaculture regulations took a strong position on the monitoring, reporting and auditing of sea lice levels. In the past 2 years there has been renewed interest in the effects of sea lice in part due to some evidence of decreased effectiveness of the primary treatment (SLICE) and concerns that the regulatory system is not prescriptive enough to enforce management of lice levels. There has also been reports of higher lice loads on wild fish in the vicinity of salmon farms which has elevated concerns.
<b>Current Science Advice (what is risk to salmon of sea lice)</b>	There has been multiple research papers documenting the impact of sea lice on wild salmon. While there are thresholds at which the number of lice per fish can lead to mortality in some species of juvenile salmonids, there has been no assessment that concludes that farm sourced sea lice are conclusively causing population level declines in salmon. The thresholds are designed to be precautionary to protect juvenile salmon and are based on laboratory experiments.
<b>Current departmental actions on sea lice</b>	Sea lice are managed in BC under the BC conditions of license. During the period of salmon outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of three motile (pre-adult and adult) lice ( <i>Lepeophtheirus salmonis</i> ) per fish) are exceeded. If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance. The veracity of industry reported data is assured through DFO auditing. During the outmigration period, DFO increases sea lice audits to 50 per cent of all active Atlantic salmon sites. All sea lice data is publicly reported at the farm site level.  The current issue relates to the specific wording of the licence that only compels the operator <u>implement a plan</u> to reduce the lice levels. The difficulty being that the implementation of an ineffective plan may still meet the conditions of licence and make enforcement difficult.
<b>What additional management actions could be considered</b>	A revision of the COLs to increase the enforceability to improve public confidence in the DFO regulatory system. It is also important to modernize the COLs taking into account an Area Based Management approach which will put in place different metrics based on local environmental considerations as well as wild fish status. DFO will also undertake a review of the management regime in other jurisdictions to see what might be applicable in the BC context. The revision process could be launched and promised for completion prior to the 2020 salmon migration window.

June 12, 2019

	Another action that could be undertaken	
Required Next steps/stakeholder engagement (including what we needs to be further understood/what we should not or cannot do now)	Engage the about to be formed Fish Heath Technical Working Group on the issue of sea lice and have their recommendations inform any license changes.	
Possible announcement	Minister to announce that he has directed the Department to revise the Aquaculture Licenses in BC to ensure that the lice management measures are updated to the highest international standards and are enforceable and that this must be done before the next out migration of wild salmon. He could also state that these changes will be the informed by the engagement with the technical working group.	
Stakeholder views		

s.14  
s.21(1)(a)  
s.21(1)(b)

June 12, 2019

Document Released Under the Access to  
Information Act / Document divulgué en vertu  
de la Loi sur l'accès à l'information.

[REDACTED]

No information has been removed or severed from this page

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 12, 2019 8:23 PM  
**To:** Thomson, Andrew  
**Subject:** Re: Sea Lice Table

OK thx so much

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Thomson, Andrew  
**Sent:** Wednesday, June 12, 2019 8:20 PM  
**To:** Webb, Allison  
**Subject:** Re: Sea Lice Table

RR is on it, I just talked to her

Andrew Thomson  
Regional Director - Fisheries Management  
Sent from my mobile device


----- Original message -----

From: "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
Date: 2019-06-12 8:11 PM (GMT-08:00)  
To: "Thomson, Andrew" <Andrew.Thomson@dfo-mpo.gc.ca>  
Subject: Re: Sea Lice Table

Are you going to send up or do we need to integrate science input too?

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Thomson, Andrew  
**Sent:** Wednesday, June 12, 2019 7:30 PM  
**To:** Webb, Allison; Reid, Rebecca  
**Subject:** Re: Sea Lice Table

I agree with most of the edits but I don't think we should include 

Andrew Thomson  
Regional Director - Fisheries Management  
Sent from my mobile device

s.21(1)(a)  
s.21(1)(b)

----- Original message -----

From: "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
Date: 2019-06-12 5:01 PM (GMT-08:00)  
To: "Thomson, Andrew" <Andrew.Thomson@dfo-mpo.gc.ca>, "Reid, Rebecca" <Rebecca.Reid@dfo-mpo.gc.ca>  
Subject: RE: Sea Lice Table

Some suggested edits for your consideration. Please take a look at the suggestions re [REDACTED]

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 12, 2019 4:24 PM  
**To:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Sea Lice Table

I took Alix's table concept and filled it in. I think we should simplify that we need stronger lice regulations [REDACTED]  
[REDACTED]

I wrote the science advice piece - so Arran or Carmel should review / revise.

Andrew J L Thomson  
Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada  
Suite 200 – 401 Burrard St.  
Vancouver, BC, Canada V6C 3S4  
[andrew.thomson@dfo-mpo.gc.ca](mailto:andrew.thomson@dfo-mpo.gc.ca)  
Telephone | Téléphone 604.666.0751  
Facsimile | Télécopieur 250.666.8069  
Government of Canada | Gouvernement du Canada

s.21(1)(a)

s.21(1)(b)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 8:54 AM  
**To:** Dostal, Alexandra; Reid, Rebecca; Morel, Philippe; Thomson, Andrew; Lowe, Carmel  
**Cc:** Fogliato, Cara; Campbell, John P.; Martell, D John; Struthers, Alistair  
**Subject:** RE: Sea lice one pager

During the salmon smolt outmigration (March 1- June 30), if a site is above the 3 mobile lice threshold, the company is required to implement a plan to reduce the absolute sea lice inventory within the site.

This will end in 2 weeks as the smolts have already passed by. I am unable to suggest additional short term measures that are meaningful.

Starting in July 1: it is mandatory if the threshold is exceeded, that industry must increase its monitoring to at least once every two weeks, and provide the department a plan within 30 days to address the exceedance. This is in place throughout the rest of the year.

Consistent with our current regulatory framework, we are unable to do anything else that is inconsistent with the PAR. The current COLs would need to be opened and any changes related to that would require consultation and time to implement.

In terms of stakeholder feedback, we have had limited opportunity to consult which is why I have been suggesting moving forward to engage in the context of opening the COL, however some limited feedback to date is:

- Farm based thresholds instead of a per fish threshold
- Mandatory fallowing periods
- Improve the enforceability of the COL
- Customized timing windows for out migration based on a local stocks

Hope this helps,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 13, 2019 6:22 AM  
**To:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Lowe, Carmel <Carmel.Lowe@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Fogliato, Cara <Cara.Fogliato@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice one pager



Hi there,

Two quick additional things that the DM's office suggested the department be ready to speak to (and we would be happy to type something up and send up if helpful, with input from BC colleagues):

[REDACTED]

- what have we heard stakeholders asking for re sea lice (are they asking for mandatory fallowing, other measures)?

If helpful, we can start drafting a quick email in case the DM asks and share it with pacific for inputs.

Alix

**Alix Dostal**

613-993-1884

s.21(1)(a)

s.21(1)(b)

**Delaney, Paula**

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**From:** Martell, D John  
**Sent:** Thursday, June 13, 2019 10:18 AM  
**To:** McPherson, Arran; Thomson, Andrew; Webb, Allison; Parsons, Jay  
**Cc:** Dostal, Alexandra  
**Subject:** request for quick review of Draft table for Min briefing  
**Attachments:** Table Sea Lice June 13.docx

Good morning/afternoon again,

Apologies, I forgot to delete a few bullets that were supposed to be removed following your earlier review. I have deleted them in the attached version.

John

No information has been removed or severed from this page

June 12, 2019

## SEA LICE

<b>State of Play on Sea lice</b>	<p>Sea Lice infestations on farms were the major detrimental effect of aquaculture identified by ENGOs in the Mid-2000s. The issue prompted significant research efforts by DFO and changes to the provincial aquaculture regulations. The 2010 DFO aquaculture regulations required significant monitoring, reporting and auditing of sea lice levels. In the past 2 years there has been renewed interest in the effects of sea lice in part due to some evidence of decreased effectiveness of the primary treatment (SLICE) and concerns that the regulatory system is not prescriptive enough to enforce management of lice levels.</p> <p>Recent reports of higher lice loads on wild fish in the vicinity of salmon farms has elevated concerns. As well, the increasing frequency of sea lice tolerance to emamectin benzoate (Slice), has lessened the effectiveness of this drug as a management tool in some locations. In response, the industry has introduced alternative mechanical control methods involving removal of lice with high pressure fresh water.</p> <p>There has been multiple research papers documenting the impact of sea lice on wild salmon. While there are thresholds at which the number of lice per fish can lead to mortality in some species of juvenile salmonids, there has been no assessment that concludes that farm sourced sea lice are conclusively causing population level declines in salmon. The thresholds are designed to be precautionary to protect juvenile salmon and are based on laboratory experiments. As well, the risk posed by sea lice to wild salmon diminishes with increased fish size.</p> <p>Sea lice are managed in BC under conditions of licence. During the period of salmon outmigration, (March 1 to June 30 of each year), marine finfish aquaculture sites require increased monitoring, reporting, notification and intervention requirements if sea lice thresholds (currently set at an average of three motile (pre-adult and adult) lice (<i>Lepeophtheirus salmonis</i>) per fish) are exceeded. If the numbers exceed this threshold during the outmigration period, licence holders are required to take action to reduce lice abundance. DFO confirms industry results through audits of their records; during the outmigration period, DFO increases sea lice audits to 50 per cent of all active Atlantic salmon sites. All sea lice data is publicly reported at the farm site level.</p> <p>While industry reporting and DFO auditing is well managed, the conditions of licence require only that the operator implement a plan to reduce the lice levels. Therefore, implementation of an ineffective plan may still meet the conditions of licence and makes enforcement difficult.</p> <p>For the Pacific Region, by the 2020 salmon migration window, Aquaculture management will:</p>
<b>Current Science Advice (what is risk to salmon of sea lice)</b>	
<b>Current departmental actions on sea lice</b>	
<b>What additional management actions could be considered</b>	

s.21(1)(a)  
s.21(1)(b)

000508

June 12, 2019

	<p>COL will be updated to be consistent with the new Area Based Management approach, so that thresholds for sea lice are more adaptive, better accounting for local environmental considerations as well as wild fish status.</p> <ul style="list-style-type: none"> <li></li> </ul> <p>In addition, research effort could be dedicated to the following questions:</p> <ul style="list-style-type: none"> <li>• Area-based management:</li> <li>• establish a hydrographic basis for the definition of pathogen management areas within the salmon aquaculture industry in BC (linkage to area based management);</li> <li>• examine the efficacy of coordinated fallowing, stocking, harvesting and treatment as management practices for controlling the spread of sea lice and pathogens (linkage to area based management);</li> <li>• Evaluate whether an area-level sea lice threshold rather than a fish-level threshold might be a more effective predictor of risk to wild populations.</li> <li>• Initiate research programs on non-chemical methods of sea lice management on cultured salmon in BC;</li> <li>• develop further knowledge on the suitability of pile perch species as cleaner fish;</li> <li>• evaluate the relative efficacy and risks associated with the use of fresh water and warm water treatments in BC;</li> <li>• Further develop the diagnostic tools necessary for the early detection of resistance in sea lice to chemicals used for their control in BC.</li> <li>• Conduct laboratory studies on the impacts of sea lice load on juvenile Coho, Chinook and Chum salmon.</li> <li>• Validate genomic selection among Atlantic salmon for resistance to infection by sea lice (<i>Lepeophtheirus salmonis</i>), and concomitant susceptibility to infectious salmon anemia virus (ISAV)</li> <li>• Assess the potential for development of thermal resistance of sea lice to warm water showers</li> <li>• Undertake genomic assessment of potential genetic interactions of the use of European Lumpfish as a cleaner fish in Atlantic salmon aquaculture in Newfoundland</li> <li>• Define the risk of sea lice infections through the development of an understanding of the early life history population dynamics of sea lice on Atlantic salmon aquaculture sites in the Bay of Fundy.</li> </ul>
<p><b>Required Next steps/stakeholder engagement (including what we needs to be further</b></p>	<ul style="list-style-type: none"> <li>- Engage with the licence holders to review management changes, including implementation planning and to seek support by licence holders for changes to COL, or consider conservation rationale for changes.</li> <li>- Use the newly announced Fish Health Technical Working Group to seek their input and advice on the issue of sea lice as it relates to management changes, conditions of licence, or research questions.</li> </ul>

s.21(1)(a)  
s.21(1)(b)

000509

June 12, 2019

<b>understood/what we should not or cannot do now)</b>	
<b>Possible announcement</b>	<b>Ministerial announcement:</b> <ul style="list-style-type: none"><li>- Minister has directed the Department to revise the Aquaculture Licenses in BC to ensure that the lice management measures are updated to the highest international standards and are enforceable and that this will be in place before the next out migration of wild salmon.</li><li>- The newly informed Fish Health Technical working group will be asked to provide advice and input to inform further changes to the management and research of sea lice BC.</li></ul>
<b>Stakeholder views</b>	<div></div> <div></div> <div></div> <div></div> <div></div>

s.14  
s.21(1)(a)  
s.21(1)(b)

## **Delaney, Paula**

---

**From:** Thomson, Andrew  
**Sent:** Thursday, June 13, 2019 10:34 AM  
**To:** Dostal, Alexandra; Webb, Allison; Martell, D John; McPherson, Arran; Parsons, Jay  
**Subject:** RE: request for quick review of Draft table for Min briefing  
**Attachments:** Table Sea Lice June 13 (003)AJLT.docx

Heres the change

Andrew J L Thomson

Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada

**From:** Dostal, Alexandra  
**Sent:** Thursday, June 13, 2019 10:21 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>  
**Subject:** RE: request for quick review of Draft table for Min briefing

Allison if you don't mind changing as you see fit, that is great. The DM wanted to have some clarity on what we meant by "improving enforceability of COLs" (sorry I might have language wrong there). The pieces we added were from the note, but if they don't work, please feel free to adjust as needed.

**Alix Dostal**

613-993-1884

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Thursday, June 13, 2019 1:19 PM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>; McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Parsons, Jay <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>  
**Subject:** RE: request for quick review of Draft table for Min briefing

There are some inaccuracies here. It would be better to be more general re opening the COL. There are no current tools for penalties under the FA.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>

**Sent:** Thursday, June 13, 2019 10:08 AM

**To:** Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>; McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Parsons, Jay <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>

**Subject:** RE: request for quick review of Draft table for Min briefing

This was our attempt to give life to the changes requested by the DM during our briefing.

Sorry to be rushing here, but I think changes need to be up very quickly so we can get it back in time for the briefing. We pulled language out of the previous note in terms of options for COLs.

**Alix Dostal**

613-993-1884

**From:** Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>

**Sent:** Thursday, June 13, 2019 1:05 PM

**To:** McPherson, Arran <[Arran.McPherson@dfo-mpo.gc.ca](mailto:Arran.McPherson@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Parsons, Jay <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>

**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>

**Subject:** request for quick review of Draft table for Min briefing

Good morning/afternoon,

Alix has requested that I pass on this draft Table for your quick review. Could please have your revisions back to me by 1:30 today so that I can revise accordingly and send on to DMO?

Apologies for the short turnaround. Many thanks.

John

**D. John Martell, MSc, PhD**

Senior Fisheries and Aquaculture Management Officer | Principal des pêches et de la gestion de l'aquaculture

Senior Science Liaison Advisor | Conseiller scientifique principal de liaison

Aquaculture Management Directorate | Direction Générale de la Gestion de l'Aquaculture

Fisheries and Oceans Canada | Pêches et Océans Canada

200 Kent Street, Stn. 10E216, Mail Station 10N207

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[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)



Government  
of Canada

Gouvernement  
du Canada

Canada

**From:** [Webb, Allison](#)  
**To:** [Fenton, AJ](#); [Patirana, Anoma](#)  
**Subject:** RE: June 2019 Updated Sea Lice Text  
**Date:** Thursday, June 13, 2019 7:15:53 PM  
**Attachments:** [June 2019 Updated Sea Lice Text \(002\).aw.docx](#)

---

Let's go with this, recognizing that we still might need to delete this text depending on potential announcements. Tx.

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fenton, AJ <AJ.Fenton@dfo-mpo.gc.ca>

**Sent:** Tuesday, June 11, 2019 3:48 PM

**To:** Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>

**Subject:** June 2019 Updated Sea Lice Text

Hi Allison,

I have adopted some text from Anoma's briefing note for sea lice CoLs. I've added it as a 3<sup>rd</sup> paragraph here. As discussed, we can include and then if it's no longer relevant, remove it. Please take a look at the paragraph in bold and let me know if that works.

Thanks,  
A.J.



Protected B

Solicitor/Client-Litigation Privilege

Minimizing the sea lice levels on farms through mandatory monitoring, mitigation, treatment and reporting, as well as DFO audits/inspections to ensure compliance are critical components of sustainable aquaculture management. DFO assesses sea lice abundance in farmed salmon and verifies the accuracy of industry submitted data. This provides DFO with timely information regarding the operational performance and compliance of aquaculture facilities.

Licence holders must count sea lice at active Atlantic Salmon facilities throughout the year. Sampling for sea lice occurs monthly from July to February, and every two weeks from March 1 to June 30 when wild salmon smolts out-migrate. The licence holder must report to DFO within seven days if the average number of motile *Lepeophtheirus salmonis* (a species of sea lice) exceeds three sea lice per fish during the wild salmon outmigration period.

**Sea lice abundance exceedances over the current threshold have been relatively rare since 2011; however, as part of an adaptive management approach, DFO is examining its current sea lice Conditions of Licence (COL) with a view to changing the conditions by 2020 to coincide with the next wild salmon outmigration window. A number of proposed enhancements to current licence conditions are being considered to align with the new approach to aquaculture and support Area Based Management and in consultation with First Nations, industry, and environmental non-governmental organisations.**

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 7:17 PM  
**To:** pac.prmc / pac.urpcm (DFO/MPO)  
**Cc:** Delaney, Paula  
**Subject:** RE: updated Draft\_Reply\_2019-001-01245.docx

Approved.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** pac.prmc / pac.urpcm (DFO/MPO) <XPAC.PRMCU@dfo-mpo.gc.ca>  
**Sent:** Tuesday, June 11, 2019 4:22 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** updated Draft\_Reply\_2019-001-01245.docx  
**Importance:** High

Hi Allison. Ottawa correspondence asked if we can address the two questions on page 2.

We had addressed question 1 (I bolded the sentence to bring it to their attention.)

For question 2, Adrienne added the yellow highlighted paragraph.

We're looking for your approval on this draft response **as soon as possible**.

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

Your review should also include technical accuracy and consistency with policy direction.

**If you think someone else in Pacific Region or in Legal Services** must approve and they aren't on our approval list, **please advise us ASAP and we will forward the documents for their approval.**

Thanks,  
Candace

***\*\*Please direct all e-mails regarding Minister's (001) and RDG's (501) correspondence to XPAC PRMCU.\*\****

Candace McGuire, Heather Fowlie & Alison Jacques

Managers, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada / Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada / Gouvernement du Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 7:34 PM  
**To:** Girouard, Louise  
**Subject:** RE: Sea lice - open letter? from Westerly News June 5th

Thanks so much as I wasn't aware of this.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 12, 2019 12:55 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Subject:** FW: Sea lice - open letter? from Westerly News June 5th

Sending your way as FYI as MINO requested a copy and they might reference at some point.

L

**From:** Girouard, Louise  
**Sent:** Wednesday, June 12, 2019 12:53 PM  
**To:** Lubczuk, Jocelyn <[Jocelyn.Lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.Lubczuk@dfo-mpo.gc.ca)>; Mayrand, Benoit <[Benoit.Mayrand@dfo-mpo.gc.ca](mailto:Benoit.Mayrand@dfo-mpo.gc.ca)>  
**Cc:** Hubley, Marian <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>; McElhone, Kathryn <[Kathryn.McElhone@dfo-mpo.gc.ca](mailto:Kathryn.McElhone@dfo-mpo.gc.ca)>; Jackson, Ashley <[Ashley.Jackson@dfo-mpo.gc.ca](mailto:Ashley.Jackson@dfo-mpo.gc.ca)>; Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>; Seguin, Natalie <[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca)>; Mcgrath, Cheryl <[Cheryl.Mcgrath@dfo-mpo.gc.ca](mailto:Cheryl.Mcgrath@dfo-mpo.gc.ca)>; Jahn, Robin <[Robin.Jahn@dfo-mpo.gc.ca](mailto:Robin.Jahn@dfo-mpo.gc.ca)>; NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>; Campbell, Barre <[Barre.Campbell@dfo-mpo.gc.ca](mailto:Barre.Campbell@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>; Tran, Thi <[Thi.Tran@dfo-mpo.gc.ca](mailto:Thi.Tran@dfo-mpo.gc.ca)>; Saindon, Carole <[Carole.Saindon@dfo-mpo.gc.ca](mailto:Carole.Saindon@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice - open letter?

As promised. Here is a copy of the Open letter on p.18 of the June 5<sup>th</sup> online edition. <https://www.westerlynews.ca/e-editions/>

s.68(a)

Wednesday, June 5, 2019

Tofino-Ucluelet Westerly News [www.westerlynews.ca](http://www.westerlynews.ca)

An open letter to the Clayoquot Region and surrounding communities.



**Page 517**

**is withheld pursuant to section  
est retenue en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

Cermaq Canada

---

**From:** Lubczuk, Jocelyn  
**Sent:** June-11-19 1:29 PM  
**To:** NCR Media RCN (DFO/MPO); Saindon, Carole; Mayrand, Benoit; Campbell, Barre; Rainer, Michelle; Tran, Thi  
**Subject:** Sea lice - open letter?

Hello all,  
Can you share a copy of the open letter as referenced below?

—

**Sea Lice Plagues Return and Threat to Wild Salmon Increases  
The Tyee**

In an open letter published in the Tofino-Ucluelet Westerly News last week, Cermaq [REDACTED] [REDACTED] said “we were unable to effectively manage sea lice populations for a variety of reasons including unusually hot and dry weather” at its farms in Clayoquot Sound.

The company added that the Ahousaht and Tla-o-qui-aht Nations had put the company on notice to “do better in our management of sea lice.”

**Jocelyn Lubczuk**  
Press Secretary  
Fisheries, Oceans and the Canadian Coast Guard  
[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)  
[REDACTED]

s.16(2)(c)  
s.19(1)  
s.68(a)

Available at:

[https://www.researchgate.net/publication/26247579\\_Infection\\_threshold\\_to\\_estimate\\_Lepeophtheirus\\_salmonis-associated\\_mortality\\_among\\_juvenile\\_pink\\_salmon](https://www.researchgate.net/publication/26247579_Infection_threshold_to_estimate_Lepeophtheirus_salmonis-associated_mortality_among_juvenile_pink_salmon)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 7:34 PM  
**To:** Paylor, Adrienne; McConnachie, Sarah  
**Subject:** FW: Sea lice - open letter? from Westerly News June 5th

Not sure if you've seen this.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 12, 2019 12:55 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Subject:** FW: Sea lice - open letter? from Westerly News June 5th

Sending your way as FYI as MINO requested a copy and they might reference at some point.

L

**From:** Girouard, Louise  
**Sent:** Wednesday, June 12, 2019 12:53 PM  
**To:** Lubczuk, Jocelyn <[Jocelyn.Lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.Lubczuk@dfo-mpo.gc.ca)>; Mayrand, Benoit <[Benoit.Mayrand@dfo-mpo.gc.ca](mailto:Benoit.Mayrand@dfo-mpo.gc.ca)>  
**Cc:** Hubley, Marian <[Marian.Hubley@dfo-mpo.gc.ca](mailto:Marian.Hubley@dfo-mpo.gc.ca)>; McElhone, Kathryn <[Kathryn.McElhone@dfo-mpo.gc.ca](mailto:Kathryn.McElhone@dfo-mpo.gc.ca)>; Jackson, Ashley <[Ashley.Jackson@dfo-mpo.gc.ca](mailto:Ashley.Jackson@dfo-mpo.gc.ca)>; Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>; Seguin, Natalie <[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca)>; Mcgrath, Cheryl <[Cheryl.Mcgrath@dfo-mpo.gc.ca](mailto:Cheryl.Mcgrath@dfo-mpo.gc.ca)>; Jahn, Robin <[Robin.Jahn@dfo-mpo.gc.ca](mailto:Robin.Jahn@dfo-mpo.gc.ca)>; NCR Media RCN (DFO/MPO) <[Media.XNCR@dfo-mpo.gc.ca](mailto:Media.XNCR@dfo-mpo.gc.ca)>; Campbell, Barre <[Barre.Campbell@dfo-mpo.gc.ca](mailto:Barre.Campbell@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>; Tran, Thi <[Thi.Tran@dfo-mpo.gc.ca](mailto:Thi.Tran@dfo-mpo.gc.ca)>; Saindon, Carole <[Carole.Saindon@dfo-mpo.gc.ca](mailto:Carole.Saindon@dfo-mpo.gc.ca)>; Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice - open letter?

As promised. Here is a copy of the Open letter on p.18 of the June 5<sup>th</sup> online edition. <https://www.westerlynews.ca/e-editions/>

Wednesday, June 5, 2019

s.68(a)

Tofino-Ucluelet Westerly News [www.westerlynews.ca](http://www.westerlynews.ca)

An open letter to the Clayoquot Region and surrounding communities.



**Page 520**

**is withheld pursuant to section  
est retenue en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

[REDACTED]

Cermaq Canada

---

**From:** Lubczuk, Jocelyn

**Sent:** June-11-19 1:29 PM

**To:** NCR Media RCN (DFO/MPO); Saindon, Carole; Mayrand, Benoit; Campbell, Barre; Rainer, Michelle; Tran, Thi

**Subject:** Sea lice - open letter?

Hello all,

Can you share a copy of the open letter as referenced below?

---

**Sea Lice Plagues Return and Threat to Wild Salmon Increases**  
**The Tyee**

In an open letter published in the Tofino-Ucluelet Westerly News last week, Cermaq [REDACTED] [REDACTED] said “we were unable to effectively manage sea lice populations for a variety of reasons including unusually hot and dry weather” at its farms in Clayoquot Sound.

The company added that the Ahousaht and Tla-o-qui-aht Nations had put the company on notice to “do better in our management of sea lice.”

**Jocelyn Lubczuk**

Press Secretary

Fisheries, Oceans and the Canadian Coast Guard

[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)

s.16(2)(c)

s.19(1)

s.68(a)



## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 7:35 PM  
**To:** MacDougall, Lesley; Parsons, Jay  
**Subject:** RE: second powerpoint - sea lice research, susceptibility, etc.

Jay – I'm out of the office all this week and looked for this presentation and still haven't found it yet. I'll keep looking, but am sorry if I can't find it for you. I am sure when I get back to Vancouver I can locate it as it would have gone up officially for the briefing.

Tx,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** MacDougall, Lesley <Lesley.MacDougall@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 12, 2019 1:03 PM  
**To:** Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** Fw: second powerpoint - sea lice research, susceptibility, etc.

Jay - was able to find the science component - but AMD added significantly to the final product RE: their audit prgm

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** MacDougall, Lesley <[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)> s.21(1)(a)  
**Sent:** Wednesday, May 22, 2019 10:53 s.21(1)(b)  
**To:** Webb, Allison; Waddington, Zac; Reid, Rebecca  
**Cc:** Lowe, Carmel  
**Subject:** second powerpoint - sea lice research, susceptibility, etc.

Hello all;  
I've followed up with Simon and based on his input and presentations I've attached a second sea lice summary, which provides more detail regarding studies of species specific impacts and studies on prevalence on wild salmon, [REDACTED]  
[REDACTED]

Simon also notes that he has not worked on steelhead or rainbow trout in his lab; some lab studies from Norway and eastern Canada indicate rainbow trout are relatively susceptible to Leps, and data from Japanese and Canadian high seas and coastal research indicate infection of steelhead is frequently observed.

Lesley MacDougall  
A/Division Manager, Aquatic Diagnostics, Genomics & Technology / Division des diagnostics, la génomique, de la technologie aquatique  
Fisheries and Oceans Canada / Pêches et Océans Canada  
Pacific Biological Station / Station Biologique du Pacifique

Nanaimo, B.C. V9T 6N7  
250-756-7895  
[Lesley.MacDougall@dfo-mpo.gc.ca](mailto:Lesley.MacDougall@dfo-mpo.gc.ca)

No information has been removed or severed from this page

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 7:47 PM  
**To:** McCorquodale, Brenda; Mollins, Jennifer  
**Subject:** RE: Meeting of the FNFC Penticton

Ok thanks so much. Depending on how sea lice shakes out this next few days, it would be really good to add this to the agenda. Otherwise this looks fine. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 13, 2019 11:30 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Mollins, Jennifer <Jennifer.Mollins@dfo-mpo.gc.ca>  
**Subject:** RE: Meeting of the FNFC Penticton

Jennifer is not here today –  
The focus was supposed to be on freshwater issues, but Jennifer was looking at refocusing based on recent events.  
See attached her first draft – I have not reviewed .  
Brenda

Brenda McCorquodale

Regional Manager, Aquaculture Resource Management  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des peches  
Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: 250-754-0367

---

**From:** Webb, Allison  
**Sent:** Thursday, June 13, 2019 11:22 AM  
**To:** Mollins, Jennifer  
**Cc:** McCorquodale, Brenda  
**Subject:** Meeting of the FNFC Penticton

Hi Jennifer – Can you please send me the agenda for the upcoming meeting? We are in the managers meeting doing forward planning and want to think about who might need to attend and what topics are being discussed. We should cover recent announcements, but may also wish to open a discussion on sea lice – TBD.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, June 14, 2019 10:05 AM  
**To:** Rainer, Michelle  
**Subject:** Re: URGENT: for approval--sea lice news release

I'm chairing an industry meeting so will get back to you in a bit

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Rainer, Michelle  
**Sent:** Friday, June 14, 2019 9:56 AM  
**To:** Webb, Allison  
**Subject:** RE: URGENT: for approval--sea lice news release

All I know is the release goes out early next week. I am to prepare media lines and a Q&A. We have asked if they plan a tech briefing but no info yet. Will keep you posted.

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Friday, June 14, 2019 9:46 AM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** Re: URGENT: for approval--sea lice news release

When is this expected to be announced? Media release only or technical briefing or?

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Rainer, Michelle  
**Sent:** Friday, June 14, 2019 9:15 AM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** URGENT: for approval--sea lice news release

Hi Allison,  
Another urgent document for your approval. Adrienne has approved.  
Thanks,  
Michelle

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Friday, June 14, 2019 9:14 AM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** FW: URGENT: for approval--sea lice news release  
**Importance:** High

Only made one change to remove esperanza 2019 because they are over but in compliance so just refer to west coast is my recommendation.

---

**From:** Rainer, Michelle  
**Sent:** June-14-19 8:58 AM  
**To:** Paylor, Adrienne

**Subject:** URGENT: for approval--sea lice news release  
**Importance:** High

Hi Adrienne,  
For your urgent approval.  
Thanks,  
Michelle

No information has been removed or severed from this page

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, June 14, 2019 2:29 PM  
**To:** Rainer, Michelle  
**Cc:** Delaney, Paula  
**Subject:** RE: URGENT: for approval--sea lice news release  
**Attachments:** NR\_AQUA\_Seallicemeasures\_2019-06-13\_PAC\_region.aw.docx

Changes for consideration.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Friday, June 14, 2019 9:16 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>  
**Subject:** URGENT: for approval--sea lice news release  
**Importance:** High

Hi Allison,  
Another urgent document for your approval. Adrienne has approved.  
Thanks,  
Michelle

**From:** Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>  
**Sent:** Friday, June 14, 2019 9:14 AM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** FW: URGENT: for approval--sea lice news release  
**Importance:** High

Only made one change to remove esperanza 2019 because they are over but in compliance so just refer to west coast is my recommendation.

---

**From:** Rainer, Michelle  
**Sent:** June-14-19 8:58 AM  
**To:** Paylor, Adrienne  
**Subject:** URGENT: for approval--sea lice news release  
**Importance:** High

Hi Adrienne,  
For your urgent approval.  
Thanks,  
Michelle



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## News Release

For Immediate Release

### Government of Canada announces enhancements to sea lice management in British Columbia

June x, 2019 (TBC)

Vancouver, BC

Fisheries and Oceans Canada

The Government of Canada wants Canadians to be confident that our growing aquaculture sector is environmentally sustainable and continues to be economically viable.

The demand for fish and seafood as a high-protein food source is increasing significantly world-wide, which is putting pressure on wild fish populations. The aquaculture sector provides safe, high-quality Canadian products to markets here at home and around the world. Building on the Government of Canada's new approach to aquaculture, which highlighted Area Based Management, today, the Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson, spoke about a variety of improvements to management that could be strengthened as part of Area Based Management to ensure the continued protection of wild salmon. These include looking at sea lice management and implementing enhanced reporting and monitoring requirements for HSMI and jaundice syndrome as announced last week. It is expected that changes for sea lice, culminating in an enhanced approach, will be completed by 2020 in advance of the juvenile salmon smolt outmigration. .

Although sea lice exceedances have been relatively rare since 2011, the Government recognizes the need to strengthen its regulations to ensure that our management measures are updated to the highest international standards. To that end, the newly informed Fish Health Technical Working Group will be asked to provide advice and input to inform further changes to the management and research of sea lice in British Columbia. This will include changes to the current conditions of licence.

The Department will also continue to work with and consult the Province, First Nations, environmental non-governmental organisations, industry and interested partners on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of sea lice to wild salmon.

## Quotes

" The Government recognizes the need to address the weakness in the current regulations and the importance of moving quickly before the outmigration of wild salmon smolts in 2020. In partnership with the Province of British Columbia, industry, Indigenous partners, environmental groups and other stakeholders, we are moving quickly to address concerns being raised in the public to ensure that our management measures are updated to the highest international standards."

*Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson*

## Quick Facts

- Sea lice occur naturally in the marine environment and their abundance is influenced by seasonal and year-to-year variations in ocean salinity, temperature and other environmental conditions. DFO's Conditions of Licence for aquaculture require strict ongoing inspection of farmed fish to monitor sea lice



levels and implementation of management measures so that sea lice numbers are at their lowest during the outmigration of wild juvenile salmon, from March 1 to June 30 of each year.

- During most years, more than 90 percent of BC farm sites have been **below the regulatory sea lice threshold during the wild salmon outmigration period. However, sea lice counts can be variable and are affected by environmental conditions. In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island** , As part of implementing the new approach to aquaculture management announced in December 2018, DFO is proposing to explore a series of measures to enhance sea lice management , culminating in opening the sea lice condition of License (COL) with an aim to change the current conditions by 2020 to coincide with the next wild salmon migration window.
- The COL will be updated to be consistent with the new Area Based Management approach, so that thresholds are more adaptable and better account for local environmental considerations as well as wild fish status.
- The actions announced today build on other initiatives that support a robust science-based approach to regulating aquaculture and contribute to the sustainable development of the sector, including:
  - The creation of an External Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the province of British Columbia to evaluate and provide viable technology options for salmon farming in B.C., including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an *Aquaculture Act* that would outline the scope and the authorities for aquaculture management and clarify rules and requirements that the Aquaculture industry must follow.
  - Moving towards an area-based approach to aquaculture management. This will ensure that environmental, social and economic factors are taken into consideration when identifying potential areas for aquaculture development, as well as considerations relating to migration pathways for wild salmon.
  - The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) to help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for B.C. have already been announced.

## Related Products

- Backgrounder – Interim framework on the transfer of live fish and Framework for Aquaculture Risk Management
- Final CSAS report on the PRV Risk Assessment

## Associated Links

- Government of Canada announces new way forward on aquaculture management and the protection of wild salmon
- Government of Canada moves to strengthen science on aquaculture ensuring protection of wild fish stocks
- Report of the Independent Expert Panel on Aquaculture Science

- Joint Statement by Ministers Wilkinson and Duncan on the Report from the Independent Expert Panel on Aquaculture Science

- 30 -

**For more information:**

Jocelyn Lubczuk  
Press Secretary  
Office of the Minister of Fisheries, Oceans  
and the Canadian Coast Guard



[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)

Media Relations  
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613-990-7537  
[Media.xncr@dfo-mpo.gc.ca](mailto:Media.xncr@dfo-mpo.gc.ca)

**Stay Connected**

- Follow the Department of Fisheries and Oceans Canada on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).
- Follow the Canadian Coast Guard on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).
- Subscribe to receive our news releases and more via RSS feeds. For more information or to subscribe, visit [www.dfo-mpo.gc.ca/media/rss-eng.htm](http://www.dfo-mpo.gc.ca/media/rss-eng.htm).

**DRAFT**

**Prepared by:**

Natalie Séguin, Senior Communications Advisor

Approved by:	Date
Michelle Rainer	June 14
Louise Girouard	June 13
Adrienne Paylor	
Allison Webb	
Andy Thomson	
Rebecca Reid	

Approved by:	Date & Time
Rebecca Reid, RDG Pacific	
Alix Dostal, DG AMD	

s.16(2)(c)

Wayne Moore, DG SRS	
Caroline Quinn, Director, Comms	
Philippe Morel, ADM AE	
Arran McPherson, ADM Science	
Legal Services	
Marian Hubley, DG Comms	
SADMO	
DMO	
MinO	

No information has been removed or severed from this page

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, June 14, 2019 2:46 PM  
**To:** Dostal, Alexandra; Reid, Rebecca; Morel, Philippe; Hubley, Marian  
**Cc:** McPherson, Arran; Struthers, Alistair; Campbell, John P.; Thomson, Andrew; Richter, Julie  
**Subject:** RE: Sea Lice

Hi Alix – Not sure that we need anything specific at this time, but appreciate the offer of help. Products are going through approvals now and we are reviewing.

We may need to signal check that the TWG on fish health can provide advice on sea lice, but my understanding is that they will be. If so, should be captured in external comms products.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Friday, June 14, 2019 7:21 AM  
**To:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>; Hubley, Marian <Marian.Hubley@dfo-mpo.gc.ca>  
**Cc:** McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>; Campbell, John P. <John.Campbell@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Richter, Julie <Julie.Richter@dfo-mpo.gc.ca>  
**Subject:** Sea Lice

Hi Philippe, Rebecca and Marian,

I saw that one of the outcomes of the Minister's briefing is an announcement on sea lice in the near term (I didn't yet get a read out of the meeting other than the DMO follow up list so not sure if there was more detail on expectations).

I also wasn't sure if there were any specific follow ups for AMD/NHQ at this point – happy to jump in and take on anything needed so please don't hesitate to let us know how we can help.

Alix  
**Alix Dostal**

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
Government of Canada | Gouvernement du Canada

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, June 14, 2019 3:03 PM  
**To:** Rainer, Michelle  
**Subject:** RE: URGENT: for approval--sea lice news release

Ok no worries. Let's see what Andy says.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 3:01 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT: for approval--sea lice news release

OK, as I said I don't know anything beyond what is in these products. The Minister's quote will change once it hits his office so I'll move it up with a note outlining your concerns.

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 2:56 PM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Cc:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT: for approval--sea lice news release

Hi – I really don't like the quote below and would like to see it nested as part of the Min's new approach to aquaculture and ABM if at all possible. Not sure if there will be agreement with that up the line, but wouldn't sign off on this as is. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 2:50 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT: for approval--sea lice news release

Thanks, Allison. I really don't know enough about the plans for this announcement so will defer to you edits and pass on to andy for further approval. I have changed the Minister's quote to the following:

"The Government recognizes that, following the precautionary principal, it is time to review our sea lice management measures to ensure they are updated to the highest international standards. In partnership with the Province of British Columbia, industry, Indigenous partners, environmental groups and other stakeholders, we are moving quickly to address any concerns before the outmigration of wild salmon smolts in 2020."

Thanks,  
Michelle

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 2:29 PM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Cc:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Subject:** RE: URGENT: for approval--sea lice news release

Changes for consideration.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 9:16 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>  
**Subject:** URGENT: for approval--sea lice news release  
**Importance:** High

Hi Allison,  
Another urgent document for your approval. Adrienne has approved.  
Thanks,  
Michelle

**From:** Paylor, Adrienne <[Adrienne.Paylor@dfo-mpo.gc.ca](mailto:Adrienne.Paylor@dfo-mpo.gc.ca)>  
**Sent:** Friday, June 14, 2019 9:14 AM  
**To:** Rainer, Michelle <[Michelle.Rainer@dfo-mpo.gc.ca](mailto:Michelle.Rainer@dfo-mpo.gc.ca)>  
**Subject:** FW: URGENT: for approval--sea lice news release  
**Importance:** High

Only made one change to remove esperanza 2019 because they are over but in compliance so just refer to west coast is my recommendation.

---

**From:** Rainer, Michelle  
**Sent:** June-14-19 8:58 AM  
**To:** Paylor, Adrienne  
**Subject:** URGENT: for approval--sea lice news release  
**Importance:** High

Hi Adrienne,

For your urgent approval.  
Thanks,  
Michelle

No information has been removed or severed from this page

**From:** [Fenton, AJ](#)  
**To:** [Webb, Allison](#); [Patirana, Anoma](#)  
**Subject:** RE: June 2019 Updated Sea Lice Text  
**Date:** Monday, June 17, 2019 8:07:00 AM

---

Thanks Allison. I've updated it.

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Thursday, June 13, 2019 7:16 PM  
**To:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>; Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>  
**Subject:** RE: June 2019 Updated Sea Lice Text

Let's go with this, recognizing that we still might need to delete this text depending on potential announcements. Tx.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fenton, AJ <[AJ.Fenton@dfo-mpo.gc.ca](mailto:AJ.Fenton@dfo-mpo.gc.ca)>  
**Sent:** Tuesday, June 11, 2019 3:48 PM  
**To:** Patirana, Anoma <[Anoma.Patirana@dfo-mpo.gc.ca](mailto:Anoma.Patirana@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** June 2019 Updated Sea Lice Text

Hi Allison,

I have adopted some text from Anoma's briefing note for sea lice CoLs. I've added it as a 3<sup>rd</sup> paragraph here. As discussed, we can include and then if it's no longer relevant, remove it. Please take a look at the paragraph in bold and let me know if that works.

Thanks,  
A.J.



## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 17, 2019 10:50 AM  
**To:** Rainer, Michelle  
**Cc:** Delaney, Paula; Girouard, Louise; Thomson, Andrew  
**Subject:** RE: URGENT: Sea lice media products  
**Attachments:** NR\_AQUA\_Sealicenseasures\_2019-06-13\_PAC\_region.aw.docx; ML\_sea lice.aw.doc; QA\_Sea lice.aw.docx

Hi suggested changes that should be consistently carried through all documents. It's in the NR, but not in the others. Positioning this as part of the new approach to aqua and under the Area Based Management is the way that I would suggest that this be explained and of course we will aim to meet best international standards, but that shouldn't be first.

I am ccing Andy in case he has different views, but I think that we should position this within this new direction and keep all of our improvements initiatives under this banner for consistency.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
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604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Monday, June 17, 2019 10:30 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>; Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>  
**Subject:** URGENT: Sea lice media products

Hi Allison,

Andy has approved the news release (clean copy attached for reference). I've updated the media lines to be consistent and they are now ready for your urgent review, along with a Q&A. The MLs and Q&A have been approved by science.

Thanks,  
Michelle



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## News Release

For Immediate Release

### Government of Canada announces enhancements to sea lice management in British Columbia

June x, 2019 (TBC)

Vancouver, BC

Fisheries and Oceans Canada

The Government of Canada wants Canadians to be confident that our growing aquaculture sector is environmentally sustainable and continues to be economically viable.

The demand for fish and seafood as a high-protein food source is increasing significantly world-wide, which is putting pressure on wild fish populations. The aquaculture sector provides safe, high-quality Canadian products to markets at home and around the world. Today, the Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson, announced measures to strengthen aquaculture regulations to ensure the continued protection of wild salmon. Building on the Government of Canada's new approach to aquaculture, which highlighted Area-Based Management, these include a review of sea lice management and enforcement and enhanced reporting and monitoring requirements for HSMI and jaundice syndrome (as announced on June 4, 2019). Changes to sea lice licence conditions will be scheduled for completion by 2020, in advance of the juvenile salmon smolt outmigration.

Although sea lice exceedances have been relatively rare since 2011, the Government recognizes the need to strengthen its regulations to ensure that our management measures are updated to the highest international standards. To that end, the newly informed Fish Health Technical Working Group will be asked to provide advice to inform further changes to the management and research of sea lice in British Columbia. This will include changes to the current conditions of licence.

The Department will also continue to work with and consult the Province, First Nations, environmental non-governmental organizations, industry and interested partners on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of sea lice to wild salmon.

## Quotes

"The Government recognizes that, following the precautionary principal, it is time to review our sea lice management measures to ensure they are updated to the highest international standards. In partnership with the Province of British Columbia, industry, Indigenous partners, environmental groups and other stakeholders, we are moving quickly to improve and strengthen our regulatory regime to address any concerns before the outmigration of wild salmon smolts in 2020."

*Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson*

## Quick Facts

- Sea lice occur naturally in the marine environment and their abundance is influenced by seasonal and year-to-year variations in ocean salinity, temperature and other environmental conditions. DFO's Conditions of Licence for aquaculture require strict ongoing inspection of farmed fish to monitor sea lice

levels and implementation of management measures so that sea lice numbers are at their lowest during the outmigration of wild juvenile salmon, from March 1 to June 30 of each year.

- During most years, more than 90 percent of BC farm sites have been below the regulatory sea lice threshold during the wild salmon outmigration period; however, sea lice counts can be variable and are affected by environmental conditions. In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island.
- As part of implementing the new approach to aquaculture management announced in December 2018, DFO is will explore a series of measures to enhance sea lice management, culminating in opening the sea lice conditions of license (COLs). Changes to sea lice licence conditions will be scheduled for completion by 2020, in advance of the juvenile salmon smolt outmigration.
- The updated COLs will be consistent with the new Area-Based Management approach. Thresholds will be more adaptable and better account for local environmental considerations and the status of wild fish populations.
- The actions announced today build on other initiatives that support a robust, science-based approach to regulating aquaculture and contribute to the sustainable development of the sector, including:
  - The creation of an External Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the province of British Columbia to evaluate and provide viable technology options for salmon farming in B.C., including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an *Aquaculture Act* that would outline the scope and the authorities for aquaculture management and clarify rules and requirements that the Aquaculture industry must follow.
  - Moving towards an area-based approach to aquaculture management. This will ensure that environmental, social and economic factors are taken into consideration when identifying potential areas for aquaculture development, as well as considerations relating to migration pathways for wild salmon.
  - The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) to help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for B.C. have already been announced.

## Related Products

- Backgrounder – Interim framework on the transfer of live fish and Framework for Aquaculture Risk Management
- Final CSAS report on the PRV Risk Assessment

## Associated Links


- Government of Canada announces new way forward on aquaculture management and the protection of wild salmon
- Government of Canada moves to strengthen science on aquaculture ensuring protection of wild fish stocks
- Report of the Independent Expert Panel on Aquaculture Science

- Joint Statement by Ministers Wilkinson and Duncan on the Report from the Independent Expert Panel on Aquaculture Science

- 30 -

**For more information:**

Jocelyn Lubczuk  
Press Secretary  
Office of the Minister of Fisheries, Oceans  
and the Canadian Coast Guard

  
[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)

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- Follow the Canadian Coast Guard on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).
- Subscribe to receive our news releases and more via RSS feeds. For more information or to subscribe, visit [www.dfo-mpo.gc.ca/media/rss-eng.htm](http://www.dfo-mpo.gc.ca/media/rss-eng.htm).

**DRAFT**

s.16(2)(c)

**Prepared by:**

Natalie Séguin, Senior Communications Advisor

Approved by:	Date
Michelle Rainer	June 14
Louise Girouard	June 13
Adrienne Paylor	
Allison Webb	
Andy Thomson	
Rebecca Reid	

Approved by:	Date & Time
Rebecca Reid, RDG Pacific	
Alix Dostal, DG AMD	

Wayne Moore, DG SRS	
Caroline Quinn, Director, Comms	
Philippe Morel, ADM AE	
Arran McPherson, ADM Science	
Legal Services	
Marian Hubley, DG Comms	
SADMO	
DMO	
MinO	

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**DRAFT**

## **Media Lines**

### **Issue:**

In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island. Although sea lice exceedances have been relatively rare since 2011, in alignment with the new approach to aquaculture announced in December 2018 and Area Based Management, it is important to revisit our sea lice management to support these initiatives. In mid-June, Minister Wilkinson will announce proposed next steps in addressing sea lice management in British Columbia over the next year, culminating in an enhanced approach to be completed by 2020.

### **Desired Soundbite:**

The Government of Canada is working with partners to quickly address concerns about sea lice and to ensure that our management measures are updated to the highest international standards.

### **Media lines:**

- Protecting wild Pacific salmon is a top priority to our government. **Approved in Minister's statement**
- It is important that companies who do business in the ocean follow the rules and guidelines outlined in regulations, legislation and their licence conditions. This is what Canadians expect. **Approved in Minister's statement**
- Fisheries and Oceans Canada (DFO) is taking measures to further ensure that sea lice from salmon farms present no more than minimal risk to wild salmon. **new**
- Although sea lice exceedances on salmon farms have been relatively rare since 2011, the Government recognizes the need to strengthen its regulations to ensure that our management measures are updated to the highest international standards and are aligned with the new approach to aquaculture and area based management. **From NR**
- DFO will seek advice from the newly formed Fish Health Technical Working Group that will inform changes to the management of sea lice in British Columbia and to research priorities. **From NR**  
**From NR**

**DRAFT**

- In addition, the Government will engage with the Province of British Columbia, industry and licenses holders to revise the conditions of licence (COL) and address how the Department enforces industry adherence to sea lice management conditions. **From NR**
- The Department will also continue to work with and consult the Province and with Indigenous organizations on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of farm-derived sea lice to wild salmon. **From NR**
- These actions build on other initiatives that support a robust science-based approach to regulating aquaculture and contribute to the sustainable development of the sector, including:
  - The creation of an External Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the province of British Columbia to evaluate and provide viable technology options for salmon farming in B.C., including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an Aquaculture Act that would outline the scope and the authorities for aquaculture management and clarify rules and requirements that the Aquaculture industry must follow.
  - Moving towards an area-based approach to aquaculture management including taking local knowledge and environmental conditions into effect.
  - The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) to help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for B.C. have already been announced. **From NR**

**Spokesperson:**  
**???? DFO Vet?**

**Program Contact:**  
Allison Webb or Adrienne Paylor or DFO vet?

**Communications Contact:**  
Michelle Rainer, 604-775-5065

Approved by:	Date
Michelle Rainer	June 14
Louise Girouard	

**DRAFT**

Adrienne Paylor	June 14
Allison Webb	
Andy Thomson	
Simon Jones	June 14
Henrik Kreiberg	June 14
Carmel Lowe	June 14
Rebecca Reid	

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## Questions and Answers Sea Lice

### **Q1 What are sea lice and how do they affect wild salmon?**

A1 Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon. **approved**

### **Q2 Do sea lice from salmon farms present a danger to wild salmon?**

A2 Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment. If not properly managed, lice levels on farmed salmon can become excessive and expose wild juvenile salmon to higher than natural levels of sea lice during the spring outmigration period. Ensuring that sea lice levels on salmon farms are low from March 1 to June 30 of each year protects wild salmon smolts from exposure to unnaturally high sea lice levels. **new**

It is important to note that sea lice are a natural part of the ecosystem. The goal is not to eradicate sea lice from salmon farms or from the oceans, but rather to ensure that salmon farms do not amplify the effects of sea lice on wild salmon. **new**

### **Q3 What measures will DFO take to ensure that it can enforce its sea lice regulations and licence conditions? Will the department be able to issue tickets to licence holders who break the rules?**

A3 It is important that companies who do business on our oceans to follow the rules and guidelines outlined in regulations, legislation and their licence conditions. **approved**

Specific measures will depend on the advice of the Fish Health Technical Working Group and the results of our engagement with the Province of British Columbia, industry and license holders to revise the conditions of license (COL) to address how the Department enforces industry adherence to sea lice management conditions. **new**

s.21(1)(a)

s.21(1)(b)

### **Q4 Critics have been raising concerns about sea lice for years. Why is DFO only acting now?**

A4 DFO became the regulator for aquaculture in BC in December, 2010 and at that time introduced requirements to ensure that lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk. **approved**

The Department requires sea lice management, treatment and mitigation measures at farms when lice levels are high. This minimizes potential impacts to wild salmon, particularly during the important juvenile outmigration period. **approved**

These measures have been very effective; most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. However, our oceans are getting warmer, creating conditions more favourable to sea lice, and we have now seen a few cases in which sea lice have developed resistance to SLICE (the most widely used anti-lice therapeutant in BC at this point). Following the precautionary principal, it is time to review our management measures to ensure they are updated to the highest international standards. **new**

## **SUGGESTED REVISION**

**As part of implementing the new approach to aquaculture announced in December 2018, an area based management approach is planned which will require a different way of managing sea lice to better take into account local knowledge and conditions. [something like this – but can reword]**

Results of both industry sea lice counts and DFO audits going back to 2011 are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html). **approved**

**Q5 What does DFO do to monitor wild salmon for sea lice and is additional research planned?**

A5 DFO scientists and researchers work diligently to build understanding and knowledge about sea lice, their relationship to the marine environment and fish, and the treatments and methods used to reduce their abundance near wild and farmed species. Some research activities are conducted within the Department, while other activities are collaborations with scientists and researchers from universities in Canada, other levels of government, industry and international partners. More information can be found at [www.dfo-mpo.gc.ca/aquaculture/sci-res/species-especes/sea-lice-poux-eng.htm](http://www.dfo-mpo.gc.ca/aquaculture/sci-res/species-especes/sea-lice-poux-eng.htm).

In the Pacific Region, DFO science has conducted research on sea lice since 2004, with emphasis on spatial and temporal variations of sea lice infections on juvenile wild salmon in various coastal zones. An example of this research can be found at [www.researchgate.net/publication/274382917 Spatial patterns of sea lice infection among wild and captive salmon in western Canada](http://www.researchgate.net/publication/274382917_Spatial_patterns_of_sea_lice_infection_among_wild_and_captive_salmon_in_western_Canada). **approved**

The Aquaculture Management Division in Pacific Region also assesses sea lice on wild juvenile salmon and is currently conducting this work in Esperanza Inlet near active fish farms; results of this work will be available to the public once finalized. **approved**

Additional research may be planned based on the recommendations of the Fish Health Technical Working Group. **new**

<b>Approved by:</b>	<b>Date</b>
Michelle Rainer	June 14
Louise Girouard	

Adrienne Paylor	June 14
Allison Webb	
Andy Thomson	
Simon Jones	June 14
Henrik Kreiberg	June 14
Carmel Lowe	June 14
Rebecca Reid	

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**Delaney, Paula**

---

**From:** Patirana, Anoma  
**Sent:** Monday, June 17, 2019 1:46 PM  
**To:** Parsons, Jay  
**Cc:** Webb, Allison  
**Subject:** FW: sea lice deck  
**Attachments:** MECTS-#4052560-v1-Attachment\_1\_\_AMD\_slides\_for\_MINO\_sea\_lice\_deck\_v2.PPTX  
  
**Importance:** High

Hi Jay! I heard you were looking for the sea lice 101 deck that was shared with the Minister a few weeks back. It's attached. Please let me know if you need anything else.

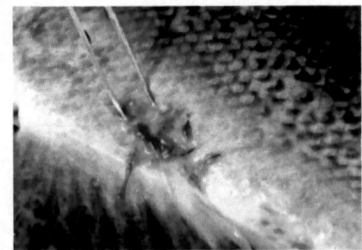
-best,  
Anoma

## Presentation on DFO Sea Lice Science and Management in BC

May 15, 2019

### Sea Lice in British Columbia

- Two main species of sea lice occur on Atlantic salmon in BC – *Lepeophtheirus salmonis* (the “salmon louse”) and to a lesser extent *Caligus clemensi* (the “herring louse”)
- Both species are naturally occurring parasites that attach to skin, fins and gills of fish and feed on the mucus and skin
- The distribution of both louse species varies seasonally, annually and regionally on both farmed and wild salmon
- The intensity of sea lice varies by species, season and years and is influenced by factors such as water temperature and salinity
- Unlike other salmon aquaculture regions, farmed salmon in BC share sea lice with a large population of wild salmon



Sea louse  
Photo: S. Robinson (DFO)

## Science Research and Findings to date

- Since 2004, DFO Science in the Pacific Region has conducted research on sea lice with emphasis on the following areas:
  - Spatial and temporal variations of *Lepeophtheirus* and *Caligus* infections on juvenile wild salmon in various coastal zones (e.g. Broughton Archipelago, Strait of Georgia);
  - Assessments of susceptibility to salmon lice among species of Pacific and Atlantic salmon;
  - Comparisons of natural defense mechanisms to sea lice found among salmon host species;
  - Modelling the dispersal of salmon lice and investigating the epidemiology of salmon lice on non-salmonid hosts.

3

## Science Research and Findings to date cont'd

- Some findings from DFO Science on sea lice:
  - Salmon lice in the Pacific Ocean are genetically distinct from those in the Atlantic Ocean. They are now considered sub-species;
  - Unique to coastal BC, the 3-spine stickleback is an important host of the salmon louse;
  - Spatial and temporal variations in the abundance of sea lice (*Lepeophtheirus* and *Caligus*) on juvenile salmon and sticklebacks result from local salinity conditions;
  - Juvenile pink and coho salmon possess a natural immunity to salmon lice;
  - Natural immunity to salmon lice reflects defense mechanisms in the skin and other body organs of juvenile salmon.

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## Sea Lice Management in British Columbia

- The operational objectives of DFO's Sea Lice Program are to:
  - Effectively manage sea lice in the farmed salmon population;
  - Protect wild juvenile salmon during their outmigration and;
  - Improve public confidence that sea lice are being appropriately managed on farmed salmon in BC
- DFO issues licences for marine finfish aquaculture that requires monitoring and intervention, if sea lice thresholds are exceeded
- A sea lice threshold of an average of 3 three motile (pre-adult and adult) lice (*Lepeophtheirus salmonis*) per fish is set for Atlantic salmon farms to protect outmigrating smolts and has been reviewed by Science
- Requirements are different for facilities cultivating Pacific salmon
- DFO publicly reports all sea lice data on a monthly basis

5

## Sea Lice Monitoring – Industry Requirements

- Aquaculture facilities growing Atlantic salmon must report monthly sea lice abundance for 20 fish per cage and a minimum of 3 cages.
- During the wild salmon outmigration ( March 1 – June 30) aquaculture facilities growing Atlantic salmon must carry out a sea lice abundance assessment every two weeks and report these results monthly
  - If there are sea lice exceedances during the outmigration period, licence holders are required to take action to reduce lice abundance

6

## Sea Lice Monitoring – DFO Audit Program

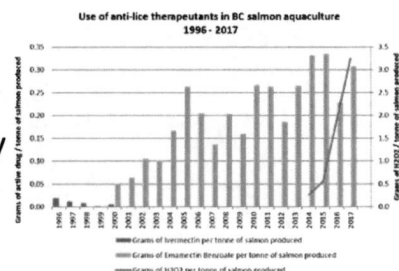
- DFO conducts sea lice audits at Atlantic salmon facilities quarterly
- In the outmigration period (Quarter 2) DFO conducts sea lice audits on 50% of all active Atlantic salmon sites
- Additionally some limited sea lice sampling on wild fish is being conducted
- At other times of the year (Quarters 1, 3 and 4) DFO conducts one sea lice audit per zone on randomly selected Atlantic salmon facilities already chosen for fish health audit, preference is given to second year class fish.
- DFO's sea lice audit includes an assessment of industry's counting sensitivity, sampling procedures and audit records.
- To date, there is good agreement between industry reported information and DFO audit data.



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## Public Reporting of Sea Lice data

- DFO publically reports on the aquaculture sector's environmental and operational performance
- More than 20 public reports are published on issues including fish health, sea lice and environmental performance via Open Data and DFO's regional website
- Public reports of relevance to sea lice include:
  - Sea Lice Audit - Quarterly
  - Farm Level Industry Sea Lice Report – Monthly
  - Sea Lice Exceedance Graph – Monthly/ Quarterly
  - Antimicrobial and Slice Use Graph – Annual



8



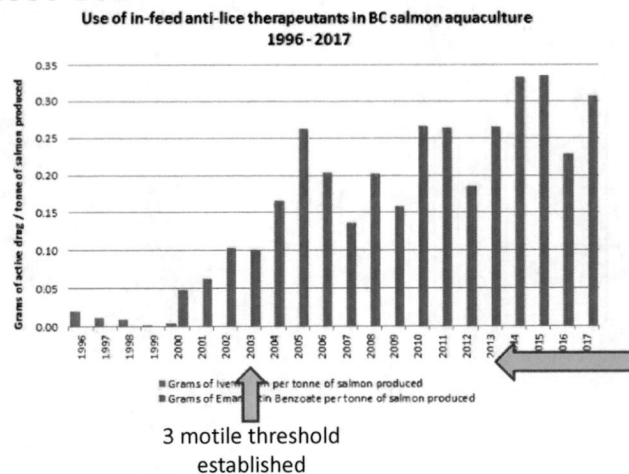
## Sea Lice Resistance

- Resistance is defined as a decreased susceptibility of an organism to a given drug/chemical
- Salmon lice have been known to develop resistance to all treatment types: SLICE, organophosphates, pyrethroids, peroxide and even fresh water
- Risk factors:
  - Less than optimal application of treatment such as insufficient dose, insufficient treatment duration
  - Increased frequency of exposure
- Prevention:
  - Appropriate treatment dose, course and consideration of subsequent lice exposure
  - *Refugia*: maintain susceptible population by avoiding exposure to drug
  - Rotational/combined use of parasiticides with different modes of action (i.e. Integrated Pest Management)

9

## SLICE Use in British Columbia

- SLICE (emamectin benzoate) used exclusively as sea lice management tool from 2000-2014

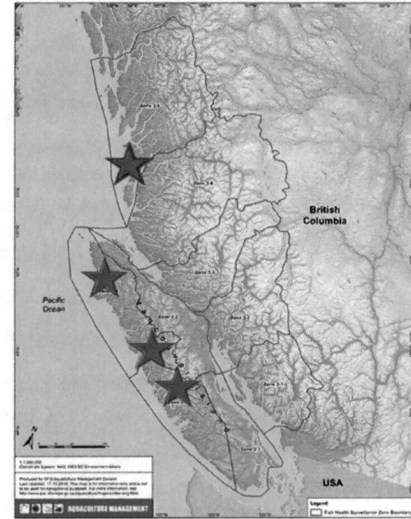


Paramove  
(hydrogen  
peroxide) first  
licensed in 2013  
in Klemtu; fully  
licensed in 2015

10

## The Problem of Sea Lice Resistance in BC

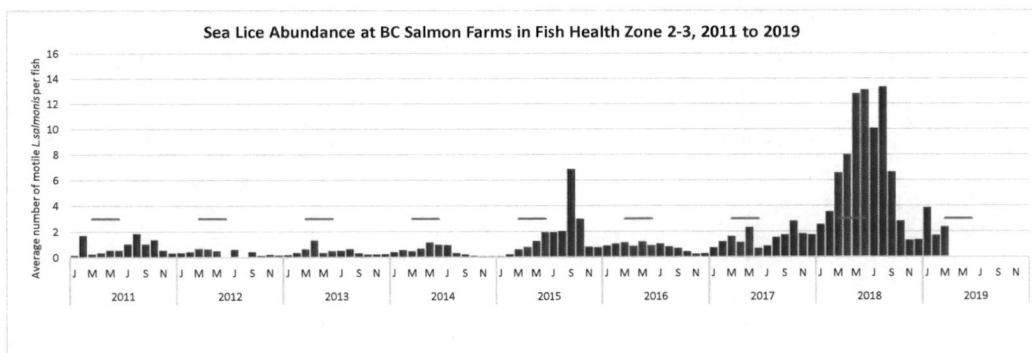
- North Pacific basin only area of world without widespread SLICE resistance
- Resistance emerged in Atlantic Region in mid-2000's and quickly spread to every salmon farming region
  - Genetic evidence of resistance in salmon lice from farmed and wild Atlantic salmon populations (no known fitness cost)
- SLICE (emamectin benzoate) resistance now documented in 4 areas
  - Klemtu- 2013
  - Quatsino- 2014
  - Esperanza- 2016-2017
  - Clayoquot- 2018



11

## Sea lice levels in Clayoquot Area (2011-2018)

- High abundances of sea lice were observed in the Clayoquot Sound area in 2018
- There was SLICE resistance at several facilities that were resolved with rapid harvest and initiation of hydrogen peroxide treatments.



12

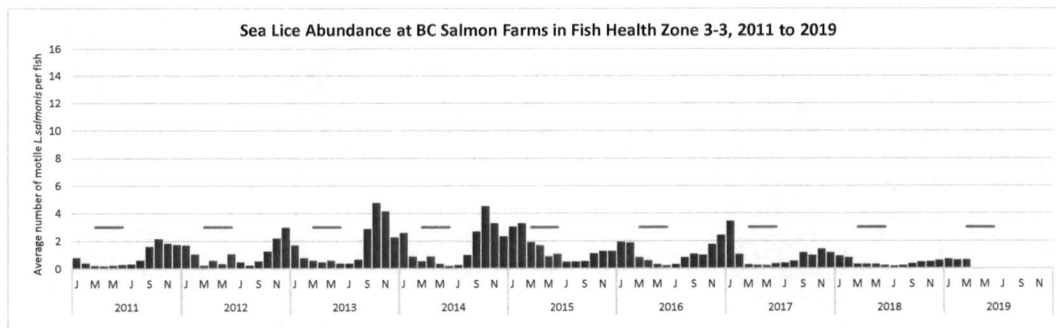
## Current Sea lice levels in Clayoquot Area

- This year in the Clayoquot area, three Cermaq farms were over threshold entering the outmigration period ( March 1)
- In response, the company accelerated harvest or applied immediate Hydrogen peroxide treatments to DFO's satisfaction
- Two of the three farms in question have since been harvested out completely and the third will complete harvesting by the end of May
- The remaining Cermaq farms in the Clayoquot region have been below threshold levels during the outmigration period
- In 2018, there were exceedances for Cermaq farms in Clayquot Sound and challenges resolving this situation which led to media attention and increased scrutiny
- Efforts by DFO staff to work with C&P to lay charges were unsuccessful

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## Sea Lice Levels in the Broughton (2011 – present)

- In the Broughton Archipelago, data show that all farms were within the threshold during the 2019 outmigration period
- DFO audited 9 farms in the Broughton in April and another two in May which were all below threshold.
- Sea lice resistance has never been observed to date in the Broughton area.



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## Future Directions on Sea Lice Management

- As challenges have emerged in several areas of the coast with sea lice management, DFO is considering a range of new approaches to manage including:
  - Area specific out-migration periods for juvenile wild salmon influencing conditions of licence
  - Consideration of farm and area level cumulative effects
  - Whether different metrics are required
  - Use of modelling to develop area-based management for lice
  - Changing of conditions of license to improve enforceability



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## Future Directions cont'd

- Continued implementation of new lice removal technologies/methods (hydrolicer, thermolicer, cleaner fish)
- Expanded use of Integrated Pest Management
- Continued research and use of findings as part of adaptive management
- Improved public communication through more interactive online tools such as Barents Watch

16

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 17, 2019 5:10 PM  
**To:** Thomson, Andrew; Mack, James AGRI:EX; Reid, Rebecca  
**Subject:** RE: BC work on sea lice management

Hello all – We'd like to discuss this at the AMC meeting on Thurs. We do have some concerns that we'll flag with the new approach as we understand it from MOE and how it may limit the number of tools for management of sea lice. We would very much appreciate an opportunity for discussion on this. It may be that MOE can clarify as we would like to be working together to facilitate Integrated Pest Management approaches.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Sent:** Monday, June 17, 2019 4:59 PM  
**To:** Mack, James AGRI:EX <James.Mack@gov.bc.ca>; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** RE: BC work on sea lice management

This is news to me, and given the current issues we're having on sea lice I would appreciate the opportunity to review it prior to release.

Andrew J L Thomson

Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada

**From:** Mack, James AGRI:EX [<mailto:James.Mack@gov.bc.ca>]  
**Sent:** Monday, June 17, 2019 4:57 PM  
**To:** Reid, Rebecca <[Rebecca.Reid@dfo-mpo.gc.ca](mailto:Rebecca.Reid@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Subject:** BC work on sea lice management

Rebecca

Not sure if someone already reached out to you on this.

A while ago you had checked with me on any upcoming announcements from the province on sea lice. It turns out that MOE is getting ready to publish their new policy on Integrated Pest Management for sea lice. There was previously work done on this a few months ago including meetings with provincial ministries, industry, and (I'm told) DFO staff.

MOE is now getting ready to make this final but we've asked them to circle around with all of us again with the final materials just to make sure it's all ok and also to coordinate timing. They should be reaching out to DFO directly but if you want any help connecting let me know

*James Mack*

*Assistant Deputy Minister – Agriculture Science and Policy*

*Ministry of Agriculture*

**NEW PHONE#: 778-698-3290**

*Fax: 250-356-7279*

*e-mail: [James.mack@gov.bc.ca](mailto:James.mack@gov.bc.ca)*

**Patirana, Anoma**

---

**From:** Patirana, Anoma  
**Sent:** June-17-19 6:52 PM  
**To:** Webb, Allison; Taekema, Bernie John; McCorquodale, Brenda  
**Subject:** Re: IPMR amendment

Doesn't the below clarification just confirm what we had understood initially and provided formal comments on - that in an emergency situation industry wouldn't be allowed to just administer H2O2 as needed, rather they'd still need a permit which requires full consultation with FNs? The exemption on needing a wellboat (delivery mechanism) doesn't do a whole lot to help in this scenario...

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

**From:** "Webb, Allison" <Allison.Webb@dfo-mpo.gc.ca>  
**Date:** 2019-06-17 5:35 PM (GMT-08:00)  
**To:** "Taekema, Bernie John" <BernieJohn.Taekema@dfo-mpo.gc.ca>, "McCorquodale, Brenda" <Brenda.McCorquodale@dfo-mpo.gc.ca>, "Patirana, Anoma" <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** RE: IPMR amendment

Hi Bernie – Thanks for following up. I might need to speak to you and Anoma about this so we can fully brief Rebecca. Not sure that I am fully straight on this. This is becoming a big item at AMC meeting on Thurs now.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada

604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Taekema, Bernie John <BernieJohn.Taekema@dfo-mpo.gc.ca>  
**Sent:** Monday, June 17, 2019 4:20 PM  
**To:** McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Patirana, Anoma <Anoma.Patirana@dfo-mpo.gc.ca>  
**Subject:** FW: IPMR amendment

I know that several people were confused about what was said relating to exemption as it related to the IPMR changes. I followed up with both Christa and Johnathan seeking clarification. See the email below.

Bernie

---

**From:** Mullan, Jonathan M ENV:EX [<mailto:Jonathan.Mullan@gov.bc.ca>]  
**Sent:** June-17-19 4:11 PM  
**To:** Taekema, Bernie John; Zacharias-Homer, Christa ENV:EX  
**Subject:** RE: IPMR amendment

Hi Bernie,

I've added a few points in red

**From:** Taekema, Bernie John <[BernieJohn.Taekema@dfo-mpo.gc.ca](mailto:BernieJohn.Taekema@dfo-mpo.gc.ca)>  
**Sent:** June 17, 2019 3:54 PM  
**To:** Mullan, Jonathan M ENV:EX <[Jonathan.Mullan@gov.bc.ca](mailto:Jonathan.Mullan@gov.bc.ca)>; Zacharias-Homer, Christa ENV:EX <[Christa.ZachariasHomer@gov.bc.ca](mailto:Christa.ZachariasHomer@gov.bc.ca)>  
**Subject:** IPMR amendment

Hi Jon and Christa,

Thanks for taking the time to help me better understand what changes will be occurring to the IPMR. I am going to summarize what I think you two told me was going to occur and hope you will correct what I got wrong. ☺

-The overall intent of the changes is to clearly state what already is occurring and to transfer existing policy into Regulation;

-no new authorizations are required and no change to the process to issue authorizations is being proposed

-current regulatory landscape:

- Permits are required for the use of pesticides in aquaculture
  - Permits require full consultation with public and FNs
- Most requirements are contained in the permits and not the IPMR directly
  - The SDM decides what permit conditions to apply
- SDMs have been directed to consider requiring Best Available Technology (BAT) since spring 2018
  - BAT technology is defined as those minimizing pesticide release to the environment (well-boats identified as prime technology)

-Basic premise of proposed amendments: to require well boats for applying pesticides and allow proponents to substitute other closed-containment technology

-also to provide an exemption to this requirement to support protection of wild salmon (by successfully managing sea lice)

-new requirements would come into effect approximately one year after the Regulation is amended

-exemption: allows the statutory decision maker to authorize other types of applications to deliver sea lice treatment (~~H2O2~~) (not just for hydrogen peroxide, for all registered pesticides) during a specified window during the year (salmon outmigration period) over and above the required close containment systems such as a well boat. The exemption could potentially authorize options other than closed containment (possibly tarps).

-It is recommended that industry applies for licences for farms where they feel they may need to use pesticides well in advance of it happening as the FN referral process can take some time.

-Cassandra Counce's operational group can explain the licensing process in more detail.

Thanks

Bernie Taekema  
Senior Aquaculture Management Coordinator  
1965 Island Diesel Way  
Nanaimo BC V9S 5W8



phone: 250 754-0398

cell: 

s.16(2)(c)

No further information has been removed or severed from this page

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 18, 2019 10:34 AM  
**To:** La Chimea, Marisa; Thomson, Andrew  
**Cc:** Barton, Meagan; Delaney, Paula; Wilkinson, Davida; Fogliato, Cara  
**Subject:** RE: Sea Lice Announcement

Hello Marisa – I'm following up and will get back to you asap.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** La Chimea, Marisa <Marisa.LaChimea@dfo-mpo.gc.ca>  
**Sent:** Tuesday, June 18, 2019 10:25 AM  
**To:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>; Wilkinson, Davida <Davida.Wilkinson@dfo-mpo.gc.ca>; Fogliato, Cara <Cara.Fogliato@dfo-mpo.gc.ca>; La Chimea, Marisa <Marisa.LaChimea@dfo-mpo.gc.ca>  
**Subject:** FW: Sea Lice Announcement  
**Importance:** High

Please see email request below for information on announcement on sea lice and please identify the industry reps in your response.

Please have your response to me by noon today.

Thank you,

Marisa La Chimea  
Tel : 604-666-7102 / Fax : 604-666-8956  
[marisa.lachimea@dfo-mpo.gc.ca](mailto:marisa.lachimea@dfo-mpo.gc.ca)

**From:** Hill, Johanna <Johanna.Hill@dfo-mpo.gc.ca>  
**Sent:** Tuesday, June 18, 2019 9:46 AM  
**To:** Johal, Sharan <Sharan.Johal@dfo-mpo.gc.ca>; La Chimea, Marisa <Marisa.LaChimea@dfo-mpo.gc.ca>  
**Cc:** Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>; Robinson, Connor <Connor.Robinson@dfo-mpo.gc.ca>; Barker, Tyler <Tyler.Barker@dfo-mpo.gc.ca>; Butcher, Ashley <Ashley.Butcher@dfo-mpo.gc.ca>; Jarjour, Jasmine <Jasmine.Jarjour@dfo-mpo.gc.ca>  
**Subject:** Sea Lice Announcement

Hi Sharan and Marisa,

Mino has heard from Industry that they were briefed by Pacific Region yesterday on the announcement on sea lice that the Minister will make. They were told this announcement will take place this week.

Can you please urgently clarify exactly what was shared with Industry reps? I'll need this response today please.

Thank you kindly,

Johanna

No information has been removed or severed from this page

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 18, 2019 12:44 PM  
**To:** La Chimea, Marisa; Thomson, Andrew  
**Cc:** Barton, Meagan; Delaney, Paula; Wilkinson, Davida; Fogliato, Cara  
**Subject:** RE: Sea Lice Announcement

Hello Marisa – As part of our regular advisory committee meetings, we have been discussing sea lice management. On June 5, 2019, my staff met with our Conservation Regulatory Working Group (ENGOS) including [REDACTED] and others where sea lice was discussed and a follow up meeting planned on June 26, 2019 where more information will be provided.

Similarly, we held our regularly scheduled Finfish Industry Advisory Committee Meeting last Friday June 14, 2019. The committee consists of the Managing Directors from each of the main salmon farming companies in BC, supply services side, Executive Director of the BC Salmon Farmers Association, representatives from BC Ministry of Agriculture, BC Ministry of the Environment, BC Ministry of Forests, Lands and Natural Resources and DFO staff working on aquaculture. Over the course of several years, sea lice has been discussed at this committee. It was again discussed at this meeting on June 14 along with many other topics including the recent announcement of early June 2019.

Similar to the messages that were provided to the Conservation Regulatory Working Group, we talked about the exceedances that had taken place in 2018, situation in 2019, tools available and including intersection with BC MOE pest management approaches. We also discussed, as we did in the other meeting, interest in opening the conditions of licence and the mechanisms to achieve that.

We did not brief on the contents of a potential announcement, but did consult as part of our regular operational business.

Please let me know if I can provide further details.

Kind regards,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

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**Sent:** Tuesday, June 18, 2019 10:25 AM  
**To:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Barton, Meagan <Meagan.Barton@dfo-mpo.gc.ca>; Delaney, Paula <Paula.Delaney@dfo-mpo.gc.ca>; Wilkinson, Davida <Davida.Wilkinson@dfo-mpo.gc.ca>; Fogliato, Cara <Cara.Fogliato@dfo-mpo.gc.ca>; La Chimea, Marisa <Marisa.LaChimea@dfo-mpo.gc.ca>  
**Subject:** FW: Sea Lice Announcement  
**Importance:** High

s.19(1)

Please see email request below for information on announcement on sea lice and please identify the industry reps in your response.

Please have your response to me by noon today.

Thank you,

Marisa La Chimea  
Tel : 604-666-7102 / Fax : 604-666-8956  
[marisa.lachimea@dfo-mpo.gc.ca](mailto:marisa.lachimea@dfo-mpo.gc.ca)

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**Sent:** Tuesday, June 18, 2019 9:46 AM  
**To:** Johal, Sharan <[Sharan.Johal@dfo-mpo.gc.ca](mailto:Sharan.Johal@dfo-mpo.gc.ca)>; La Chimea, Marisa <[Marisa.LaChimea@dfo-mpo.gc.ca](mailto:Marisa.LaChimea@dfo-mpo.gc.ca)>  
**Cc:** Proctor, Jody <[Jody.Proctor@dfo-mpo.gc.ca](mailto:Jody.Proctor@dfo-mpo.gc.ca)>; Robinson, Connor <[Connor.Robinson@dfo-mpo.gc.ca](mailto:Connor.Robinson@dfo-mpo.gc.ca)>; Barker, Tyler <[Tyler.Barker@dfo-mpo.gc.ca](mailto:Tyler.Barker@dfo-mpo.gc.ca)>; Butcher, Ashley <[Ashley.Butcher@dfo-mpo.gc.ca](mailto:Ashley.Butcher@dfo-mpo.gc.ca)>; Jarjour, Jasmine <[Jasmine.Jarjour@dfo-mpo.gc.ca](mailto:Jasmine.Jarjour@dfo-mpo.gc.ca)>  
**Subject:** Sea Lice Announcement

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Can you please urgently clarify exactly what was shared with Industry reps? I'll need this response today please.

Thank you kindly,

Johanna

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Tuesday, June 18, 2019 1:43 PM  
**To:** Thomson, Andrew; Reid, Rebecca  
**Subject:** RE: Sea Lice

I didn't see the final memo after it was revised in NHQ and don't know if it went up. If possible, would be great if NHQ could take this one so we could finish off a few other things. It seems to be the same contents portrayed different ways. If not, I'll try to do it in the next couple of hours.

Let me know your preference.

Thanks so much,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>  
**Sent:** Tuesday, June 18, 2019 1:19 PM  
**To:** Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>  
**Cc:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: Sea Lice

Rebecca

Is this something that you want the region to take on?

Andrew J L Thomson

Regional Director | Directeur régional  
Fisheries Management Branch | Direction de la gestion des pêches  
Pacific Region | Région du Pacifique  
Fisheries & Oceans Canada | Pêches et Océans Canada

**From:** Dostal, Alexandra  
**Sent:** Tuesday, June 18, 2019 1:17 PM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>; Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Cc:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>; Richter, Julie <[Julie.Richter@dfo-mpo.gc.ca](mailto:Julie.Richter@dfo-mpo.gc.ca)>  
**Subject:** Sea Lice

Hi Andy and Allison,

We were just briefing the DM today on the tech study and he was asking about the sea lice announcement. He would like to see a very short 'box memo' that sits on top of the comms docs so we can get an official decision on the initiatives proposed in the comms doc. He also suggested that this short note (which I think he really sees as less than a page or so) reference the fact that the tech tables will look at this.

Would this be something Pacific should take on since you did the announcement? We could take it on if you prefer – it needs to go up quite quickly (he didn't give a time but I think today or tomorrow since the comms materials are with DMO now).

Let me know what you think!

Alix

**Alix Dostal**

Director General, Aquaculture Management Directorate | Directrice générale, Direction de la gestion de l'aquaculture  
Aquaculture Management Directorate | Direction de la gestion de l'aquaculture  
Telephone | Téléphone: 613-993-1884  
[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)  
Government of Canada | Gouvernement du Canada

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 19, 2019 8:07 AM  
**To:** Struthers, Alistair  
**Subject:** Re: Sea lice

Hi there - could you send me the comms products to look at too? I'll get back to you within the hour. Thx so much

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Struthers, Alistair  
**Sent:** Wednesday, June 19, 2019 8:01 AM  
**To:** Dostal, Alexandra; Webb, Allison  
**Cc:** Thomson, Andrew; Martell, D John  
**Subject:** RE: Sea lice

Et voila, added to the first sentence.

Alistair

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 19, 2019 10:57 AM  
**To:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice

One quick comment from me and I'll let Allison and Andy jump in, I think we should be asking for approval of the products, but also of the policy/management approach outlined within them (i.e. approving having tech tables look at sea lice, looking at COLse etc)?

A.

**Alix Dostal**

613-993-1884

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:55 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

Here is the first draft. Welcome any comments, edits, etc.

Thanks!

Alistair



**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:44 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>;  
Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

We are on it! John on our team is working on it now and we will send to you for review shortly. I think it is due up today so we will be moving like the wind!

Alix

**Alix Dostal**

613-993-1884

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:40 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Subject:** Sea lice

Hi Alix - if you could have someone in your team do the drafting, I can review in between meetings and acting for Andy today. I would appreciate the help.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 19, 2019 8:08 AM  
**To:** Struthers, Alistair; Dostal, Alexandra  
**Cc:** Thomson, Andrew; Martell, D John  
**Subject:** Re: Sea lice

I'm headed in now and will review within the hour or so. Thx

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Struthers, Alistair  
**Sent:** Wednesday, June 19, 2019 8:01 AM  
**To:** Dostal, Alexandra; Webb, Allison  
**Cc:** Thomson, Andrew; Martell, D John  
**Subject:** RE: Sea lice

Et voila, added to the first sentence.

Alistair

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 19, 2019 10:57 AM  
**To:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice

One quick comment from me and I'll let Allison and Andy jump in, I think we should be asking for approval of the products, but also of the policy/management approach outlined within them (i.e. approving having tech tables look at sea lice, looking at COLse etc)?

A.

**Alix Dostal**

613-993-1884

**From:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 19, 2019 10:55 AM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice

Here is the first draft. Welcome any comments, edits, etc.

Thanks!

Alistair

**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:44 AM  
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**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>;  
Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

We are on it! John on our team is working on it now and we will send to you for review shortly. I think it is due up today so we will be moving like the wind!

Alix

**Alix Dostal**

613-993-1884

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**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Subject:** Sea lice

Hi Alix - if you could have someone in your team do the drafting, I can review in between meetings and acting for Andy today. I would appreciate the help.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

**Delaney, Paula**

---

**From:** Struthers, Alistair  
**Sent:** Wednesday, June 19, 2019 9:43 AM  
**To:** Webb, Allison; Dostal, Alexandra  
**Cc:** Thomson, Andrew; Martell, D John  
**Subject:** RE: Sea lice  
**Attachments:** Memo-Minister Sea lice comms plan BC 19\_6\_19 1240.docx

Sent the wrong memo. Please use this one. Sorry.

Alistair

**From:** Struthers, Alistair  
**Sent:** Wednesday, June 19, 2019 12:38 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Cc:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice

Here are the revised versions. I'll get Maude to send it up to ADMO, along with the three attachments.

Alix, appreciate your final review, should you have time.

Alistair

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 19, 2019 12:13 PM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: Sea lice

Alistair and I chatted and he's incorporated my one minor change and otherwise good to go. The NR 3<sup>rd</sup> para is very confusing and Alistair is going to make a suggestion to clarify it, but it may be too late. The media lines are slightly inconsistent with the NR as well, but not worth dying on the hill for ...

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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**Subject:** RE: Sea lice

Thanks for turning this around so quickly! I have proposed a few changes in the attached. Pacific colleagues, feel free to change/ignore any of my suggestions here. Once we get your thumbs up, I think we need to do two things a) john/Alistair, can you call comms just to let them know the proposed approach, that DM will send this to MIN simultaneously with comms materials?

And then let's get this to Rebecca and Philippe for approval asap.

Thx!

Alix

**Alix Dostal**

613-993-1884

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 11:02 AM  
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**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

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**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

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**Alix Dostal**

613-993-1884

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**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

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Alistair

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**Sent:** Wednesday, June 19, 2019 10:44 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>;  
Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

We are on it! John on our team is working on it now and we will send to you for review shortly. I think it is due up today so we will be moving like the wind!

Alix

**Alix Dostal**

613-993-1884

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:40 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Subject:** Sea lice

Hi Alix - if you could have someone in your team do the drafting, I can review in between meetings and acting for Andy today. I would appreciate the help.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Deputy Minister

Sous-ministre

CLASSIFICATION (CONFIDENTIAL)

20##-###-#####

EKME #: #####

MEMORANDUM FOR THE MINISTER

**ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH COLUMBIA  
(FOR DECISION)**

**SUMMARY OF ADVICE TO MINISTER**

The purpose of this note is to seek your approval of the recommended approaches to sea lice management and announcement thereof, as outlined in the attached communications materials.

Further to our discussion with you on Thursday June 13, 2019, we propose a number of measures and related announcement to enhance the management of sea lice in British Columbia.

The announcement will consist of a News Release (Tab 1), proposed Media Lines (Tab 2), and proposed Questions and Answers (Tab 3). These describe the proposed measures that the Department will be taking to enhance sea lice management in British Columbia.

This new approach to sea lice management builds on area-based management. It includes a review of sea lice management and enforcement, including reopening the Conditions of License and asking the recently announced Fish Health Technical Working Group to provide advice to inform further changes to the management and research of sea lice in British Columbia. The Department will also continue to work with and consult the Province, Indigenous partners, environmental non-governmental organizations, industry and interested partners on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of sea lice to wild salmon.

**ADVICE AND RECOMMENDATIONS TO MINISTER**

We recommend that you concur with the proposed approaches for sea lice management and related announcement, as outlined in the attached communications material.

\_\_\_\_\_  
Timothy Sargent  
Deputy Minister

\_\_\_\_\_  
Kevin Stringer  
Associate Deputy Minister

- ☐ I concur with the recommendations
- ☐ I do not concur with the recommendations

\_\_\_\_\_  
Jonathan Wilkinson  
Minister

Minister's Comments:

Attachments: (3)

- 1) News Release
- 2) Media Lines
- 3) Questions and Answers





Fisheries and Oceans Canada  
Correspondence Routing Slip

Fiche d'acheminement de correspondance  
Pêches et Océans Canada

CLASSIFICATION  
GCCMS #: 20##-###-#####  
EKME #: #####

To: Timothy Sargent  
Pour:

Date: June 19, 2019

Object: **ENHANCEMENTS TO SEA LICE MANAGEMENT IN BRITISH COLUMBIA**  
Objet: **TITRE**

From / Alexandra Dostal, Director General, Aquaculture Management Directorate  
De:

Via: Kevin Stringer, Associate Deputy Minister

Additional approvals:  
Autre(s) approbation(s):

☐

Material for the Minister  
Documents pour le Ministre

☒

Your Signature  
Votre signature

☐

Information

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors: Allison Webb (Director, Aquaculture management  
Division, Pacific Region)

Distribution:

Drafting Officer/  
Rédacteur:

D. John Martell (613-286-7366)/ A. Struthers / M S-K



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## News Release

For Immediate Release

### Government of Canada announces enhancements to sea lice management in British Columbia

June x, 2019 (TBC)

Vancouver, BC

Fisheries and Oceans Canada

The Government of Canada wants Canadians to be confident that our growing aquaculture sector is environmentally sustainable and continues to be economically viable.

The demand for fish and seafood as a high-protein food source is increasing significantly world-wide, which is putting pressure on wild fish populations. The aquaculture sector provides safe, high-quality Canadian products to markets at home and around the world.

Today, the Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson, announced measures to help ensure the continued protection of wild salmon. Building on the Government of Canada's new approach to aquaculture, which highlights area-based management, these include a review of sea lice management and enforcement as well as enhanced reporting and monitoring requirements for heart and skeletal muscle inflammation (HSMI) and jaundice syndrome (as announced on June 4, 2019). Changes to sea lice licence conditions will be scheduled for completion by 2020, in advance of the juvenile salmon smolt outmigration.

Although sea lice exceedances have been relatively rare since 2011, the Government recognizes the need to ensure that our management measures are updated to the highest international standards. To that end, the recently announced Fish Health Technical Working Group will be asked to provide advice to inform further changes to the management and research of sea lice in British Columbia. This will include changes to the current conditions of licence.

The Department will also continue to work with and consult the Province of British Columbia, Indigenous partners, environmental non-governmental organizations, industry and interested partners on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of sea lice to wild salmon.

## Quotes

"The Government recognizes that, following the precautionary approach, it is time to review our sea lice management measures to ensure they are updated to the highest international standards. In partnership with the Province of British Columbia, Indigenous partners, industry, environmental groups and other stakeholders, we are moving quickly to address any concerns before the outmigration of wild salmon smolts in 2020."

*Minister of Fisheries and Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson*

## Quick Facts

- Sea lice occur naturally in the marine environment and their abundance is influenced by seasonal and year-to-year variations in ocean salinity, temperature and other environmental conditions. DFO's conditions of licence for aquaculture require strict ongoing inspection of farmed fish to monitor sea lice

levels and implementation of management measures so that sea lice numbers are at their lowest during the outmigration of wild juvenile salmon, from March 1 to June 30 of each year.

- During most years, more than 90 percent of BC farm sites have been below the regulatory sea lice threshold during the wild salmon outmigration period; however, sea lice counts can be variable and are affected by environmental conditions. In the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island.
- As part of implementing the new approach to aquaculture management announced in December 2018, DFO is will explore a series of measures to enhance sea lice management, culminating in opening the sea lice conditions of licence. Changes to sea lice licence conditions will be scheduled for completion by 2020, in advance of the juvenile salmon smolt outmigration.
- The updated condition of licence will be consistent with the new Area-Based Management approach. Thresholds will be more adaptable and better account for local environmental considerations and the status of wild fish populations.
- The actions announced today build on other initiatives that support a robust, science-based approach to regulating aquaculture and contribute to the sustainable development of the sector, including:
  - The creation of an external Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the province of British Columbia to evaluate and provide viable technology options for salmon farming in B.C., including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an *Aquaculture Act* that would outline the scope and the authorities for aquaculture management and clarify rules and requirements that the Aquaculture industry must follow.
  - Moving towards an area-based approach to aquaculture management. This will ensure that environmental, social and economic factors are taken into consideration when identifying potential areas for aquaculture development, as well as considerations relating to migration pathways for wild salmon.
  - The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) to help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for B.C. have already been announced.

## Related Products

- [Backgrounder – Interim Framework for Aquaculture Risk Management](#)
- [Final CSAS report on the PRV Risk Assessment](#)

## Associated Links


- [Government of Canada announces new way forward on aquaculture management and the protection of wild salmon](#)
- [Government of Canada moves to strengthen science on aquaculture ensuring protection of wild fish stocks](#)
- [Report of the Independent Expert Panel on Aquaculture Science](#)

- Joint Statement by Ministers Wilkinson and Duncan on the Report from the Independent Expert Panel on Aquaculture Science

- 30 -

**For more information:**

Jocelyn Lubczuk  
Press Secretary  
Office of the Minister of Fisheries, Oceans  
and the Canadian Coast Guard

  
[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)

Media Relations  
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[Media.xncr@dfo-mpo.gc.ca](mailto:Media.xncr@dfo-mpo.gc.ca)

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- Follow the Canadian Coast Guard on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).
- Subscribe to receive our news releases and more via RSS feeds. For more information or to subscribe, visit [www.dfo-mpo.gc.ca/media/rss-eng.htm](http://www.dfo-mpo.gc.ca/media/rss-eng.htm).

DRAFT – NR\_AE\_SeaLiceMeasures\_2019-06-18\_1045

**Prepared by:**

Michelle Rainer, Communications Advisor (PAC Region)

Approved by:	Date & Time
Rebecca Reid, RDG Pacific	2019-06-17 18:00
Alix Dostal, DG AMD	2019-06-18 06:08
Wayne Moore, DG SRS	2019-06-18 10:15
Caroline Quinn, Director, Comms	2019-06-18 13:24
Philippe Morel, ADM AE	
Arran McPherson, ADM Science	
Legal Services	
Marian Hubley, DG Comms	
SADMO	
DMO	
MinO	

s.16(2)(c)

## **Questions and Answers Sea Lice**

### **Q1 What are sea lice and how do they affect wild salmon?**

A1 Sea lice are naturally occurring parasites that have lived in BC's coastal waters for thousands of years. While sea lice generally do not harm adult fish, they can harm small juvenile salmon.

### **Q2 Do sea lice from salmon farms present a danger to wild salmon?**

A2 Farmed fish are free of sea lice when they enter the ocean but can pick them up in the marine environment. If not properly managed, sea lice levels on farmed salmon can become excessive and expose wild juvenile salmon to higher than natural levels of sea lice during the spring outmigration period. Ensuring that sea lice levels on salmon farms are low from March 1 to June 30 of each year protects wild salmon smolts from exposure to unnaturally high sea lice levels.

It is important to note that sea lice are a natural part of the ecosystem. The goal is not to eradicate sea lice from salmon farms or from the oceans, but rather to ensure that salmon farms do not amplify the effects of sea lice on wild salmon.

### **Q3 What measures will DFO take to ensure that it can enforce its sea lice regulations and licence conditions? Will the department be able to issue tickets to licence holders who break the rules?**

A3 It is important that companies who do business on our oceans follow the rules and guidelines outlined in regulations, legislation and their licence conditions. Generally, sea lice exceedances have been relatively rare since 2011. During most years, more than 90 percent of BC farm sites have been below the regulatory sea lice threshold during the wild salmon outmigration period.

Specific measures will depend on the advice of the Fish Health Technical Working Group and the results of our engagement with the Province of British Columbia, industry and licence holders to revise the conditions of licence (COL) to address how the Department enforces industry adherence to sea lice management conditions.

### **Q4 Critics have been raising concerns about sea lice for years. Why is DFO only acting now?**

A4 DFO became the regulator for aquaculture in BC in December, 2010 and at that time introduced requirements to ensure that sea lice numbers are lowest during the outmigration period, when wild juvenile salmon are at greatest risk.

The Department requires sea lice management, treatment and mitigation measures at farms when sea lice levels are high. This minimizes potential impacts to wild salmon, particularly during the important juvenile outmigration period.

These measures have been very effective; most years, more than 90% of sites are below the regulatory thresholds for sea lice during the outmigration period. However, our oceans are getting warmer, creating conditions more favourable to sea lice, and we have now seen a few cases in which sea lice have developed tolerance to SLICE (the most widely used anti-lice therapeutic in BC at this point). Following the precautionary approach, it is time to review our management measures to ensure they are updated to the highest international standards.

Results of both industry sea lice counts and DFO audits going back to 2011 are available at [www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html](http://www.dfo-mpo.gc.ca/aquaculture/protect-protege/parasites-eng.html).

**Q5 What does DFO do to monitor wild salmon for sea lice and is additional research planned?**

A5 DFO scientists and researchers work diligently to build understanding and knowledge about sea lice, their relationship to the marine environment and fish, and the treatments and methods used to reduce their abundance near wild and farmed species. Some research activities are conducted within the Department, while other activities are collaborations with scientists and researchers from universities in Canada, other levels of government, industry and international partners. More information can be found at [www.dfo-mpo.gc.ca/aquaculture/sci-res/species-especes/sea-lice-poux-eng.htm](http://www.dfo-mpo.gc.ca/aquaculture/sci-res/species-especes/sea-lice-poux-eng.htm).

In the Pacific Region, DFO science has conducted research on sea lice since 2004, with emphasis on spatial and temporal variations of sea lice infections on juvenile wild salmon in various coastal zones. An example of this research can be found at [www.researchgate.net/publication/274382917\\_Spatial\\_patterns\\_of\\_sea\\_lice\\_infection\\_among\\_wild\\_and\\_captive\\_salmon\\_in\\_western\\_Canada](http://www.researchgate.net/publication/274382917_Spatial_patterns_of_sea_lice_infection_among_wild_and_captive_salmon_in_western_Canada).

The Aquaculture Management Division in Pacific Region also assesses sea lice on wild juvenile salmon and is currently conducting this work in Esperanza Inlet near active fish farms; results of this work will be available to the public once finalized.

Additional research may be planned based on the recommendations of the [Fish Health Technical Working Group](#).

**Q6 What is area-based management and when will this be implemented?**

A6 Area-based management will enhance collaboration between federal, provincial and Indigenous partners. This method improves information sharing, collective planning and ongoing monitoring and management of aquaculture activities. It aims to ensure that the unique environmental, social and economic characteristics of coastal and marine areas are understood when decisions are made regarding the placement and operation of aquaculture facilities.

Area-based aquaculture looks beyond potential impacts on a specific site. It also considers the wider ecosystem, such as a bay or estuary in which these facilities would be located.

Some countries have moved towards more comprehensive planning and assessment of potential aquaculture activities. The proposed area-based approach will increase consideration of Indigenous and community concerns when planning and approving aquaculture operations.

DFO is targeting northern Vancouver Island as the general location to pilot this approach. We've started discussions with the Province of British Columbia, Indigenous peoples and communities.

**DRAFT**

## **Media Lines**

### **Issue:**

In mid-June, Minister Wilkinson will announce proposed next steps in addressing sea lice management in British Columbia over the next year, culminating in an enhanced approach to be completed by 2020.

Over the last two years, sea lice exceedances have been observed in two areas on the west coast of Vancouver Island. Although sea lice exceedances have been relatively rare since 2011, it is important to revisit our sea lice management to ensure it aligns with DFO's new approach to aquaculture (announced in December 2018) and Area-Based Management.

### **Desired Soundbite:**

The Government of Canada is working with partners to address concerns about sea lice and to help ensure that our management measures align with DFO's new approach to aquaculture management and are updated to the highest international standards.

### **Media lines:**

- Protecting wild Pacific salmon is a top priority to our government.
- It is important that companies who do business in the ocean follow the rules and guidelines outlined in regulations, legislation and their licence conditions. This is what Canadians expect.
- Fisheries and Oceans Canada (DFO) is taking measures to further ensure that sea lice from salmon farms present no more than minimal risk to wild salmon.
- Although sea lice exceedances on salmon farms have been relatively rare since 2011, the Government recognizes the need to ensure that our management measures are updated to the highest international standards and are aligned with DFO's new approach to aquaculture management.
- DFO will seek advice from the recently announced Fish Health Technical Working Group that will inform changes to the management of sea lice in British Columbia and to research priorities.



## DRAFT

- In addition, the Government will engage with the Province of British Columbia, industry and licenses holders to revise the conditions of licence (COL) and address how the Department enforces industry adherence to sea lice management conditions.
- The Department will also continue to work with and consult the Province, Indigenous partners, environmental non-governmental organizations, industry and interested partners on integrated pest management approaches to diversify tools and test new technologies that can limit the potential impacts of sea lice to wild salmon.
- These actions build on other initiatives that support a robust science-based approach to regulating aquaculture and contribute to the sustainable development of the sector, including:
  - The creation of an external Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the province of British Columbia to evaluate and provide viable technology options for salmon farming in BC, including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an Aquaculture Act that would outline the scope and the authorities for aquaculture management and clarify rules and requirements that the Aquaculture industry must follow.
  - Moving towards an area-based approach to aquaculture management that considers local knowledge and environmental conditions.
  - The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) to help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for BC have already been announced.

**Spokesperson:**

TBC

**Program Contact:**

Allison Webb, (604) 666-7009

Adrienne Paylor (250) 202-0400

**Communications Contact:**

Michelle Rainer (604) 775-5065

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 19, 2019 12:13 PM  
**To:** Struthers, Alistair  
**Subject:** RE: Sea lice

Thx for that Alistair.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:52 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Subject:** FW: Sea lice

FYI, comms are good with our suggestion on the NR.

Alistair

**From:** Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 1:46 PM  
**To:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Cc:** Seguin, Natalie <[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

Thanks Alistair, that approach works for me.

[REDACTED] and send up to DMO shortly.

Nat, once we have a version that goes up to DMO, could you circulate the latest versions with AMD and science, please?

Ashley

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** June-19-19 1:39 PM  
**To:** Fagan, Ashley <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>  
**Subject:** FW: Sea lice

s.23

Hi Ashely,

We will be only sending the box memo to DMO, leaving the comms products to you.

Note, following my conversation with Allison, we have a slight suggestion for the NR (attached). Over to you so see if they should apply.

Thanks,

Alistair

**From:** Struthers, Alistair

**Sent:** Wednesday, June 19, 2019 12:49 PM

**To:** Saumur-Kelly, Maude <[Maude.Saumur-Kelly@dfo-mpo.gc.ca](mailto:Maude.Saumur-Kelly@dfo-mpo.gc.ca)>; Kennedy, Lori <[Lori.Kennedy@dfo-mpo.gc.ca](mailto:Lori.Kennedy@dfo-mpo.gc.ca)>

**Cc:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>

**Subject:** FW: Sea lice

Hi Maude and Lori,

Can you please prep this for transmission to ADMO to DMO. They are looking for it today in DMO.

Before we hit send, let's wait and see if we hear anything more from Alix.

Included are:

- Cover memo (box memo requested by DM)
- Tabs 1, 2 and 3 (we have minor suggestions on Tab 1 NR, as we felt paragraph 3 was confusing).

Thanks,

Alistair

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Sent:** Wednesday, June 19, 2019 12:13 PM

**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>

**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>

**Subject:** RE: Sea lice

Alistair and I chatted and he's incorporated my one minor change and otherwise good to go. The NR 3<sup>rd</sup> para is very confusing and Alistair is going to make a suggestion to clarify it, but it may be too late. The media lines are slightly inconsistent with the NR as well, but not worth dying on the hill for ...

Thanks,

Allison

Allison Webb, Director / Directrice

Aquaculture Management / Gestion de l'aquaculture

Fisheries Management Branch / Direction de la gestion des pêches

Fisheries and Oceans Canada / Pêches et Océans Canada

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604-666-7009

[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>

**Sent:** Wednesday, June 19, 2019 8:19 AM

**To:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>

**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

Thanks for turning this around so quickly! I have proposed a few changes in the attached. Pacific colleagues, feel free to change/ignore any of my suggestions here. Once we get your thumbs up, I think we need to do two things a) john/Alistair, can you call comms just to let them know the proposed approach, that DM will send this to MIN simultaneously with comms materials?

And then let's get this to Rebecca and Philippe for approval asap.

Thx!

Alix

**Alix Dostal**

613-993-1884

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 11:02 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

Et voila, added to the first sentence.

Alistair

**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:57 AM  
**To:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

One quick comment from me and I'll let Allison and Andy jump in, I think we should be asking for approval of the products, but also of the policy/management approach outlined within them (i.e. approving having tech tables look at sea lice, looking at COLse etc)?

A.

**Alix Dostal**

613-993-1884

**From:** Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:55 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>; Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

Here is the first draft. Welcome any comments, edits, etc.

Thanks!

Alistair

**From:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:44 AM  
**To:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>; Struthers, Alistair <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>;  
Martell, D John <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>  
**Subject:** RE: Sea lice

We are on it! John on our team is working on it now and we will send to you for review shortly. I think it is due up today so we will be moving like the wind!

Alix

**Alix Dostal**

613-993-1884

**From:** Webb, Allison <[Allison.Webb@dfo-mpo.gc.ca](mailto:Allison.Webb@dfo-mpo.gc.ca)>  
**Sent:** Wednesday, June 19, 2019 10:40 AM  
**To:** Dostal, Alexandra <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>  
**Cc:** Thomson, Andrew <[Andrew.Thomson@dfo-mpo.gc.ca](mailto:Andrew.Thomson@dfo-mpo.gc.ca)>  
**Subject:** Sea lice

Hi Alix - if you could have someone in your team do the drafting, I can review in between meetings and acting for Andy today. I would appreciate the help.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

## Rainer, Michelle

---

**From:** Rainer, Michelle  
**Sent:** Thursday, June 20, 2019 1:12 PM  
**To:** Webb, Allison  
**Subject:** FW: For revision - sea lice news release  
**Attachments:** NR\_AE\_SeaLiceMeasures\_2019-06-20\_1330\_MINO.docx

**Importance:** High

Hi Allison,  
Please see attached news release that has come back [REDACTED] Can you provide the input requested?  
Thanks,  
Michèle

**From:** Seguin, Natalie <Natalie.Seguin@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 20, 2019 12:22 PM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>; Bate, Dan <Dan.Bate@dfo-mpo.gc.ca>  
**Cc:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; McGrath, Cheryl <Cheryl.Mcgrath@dfo-mpo.gc.ca>  
**Subject:** For revision - sea lice news release  
**Importance:** High

Hi Michelle and Dan,

Please find attached the sea lice news release, [REDACTED] We will need Program to provide input, given the change in direction from management to enforcement. We will need to run through approvals again, once we have a revised version.

Thanks.

~N

**Natalie Séguin**

s.21(1)(a)

s.21(1)(b)

Senior Communications Advisor | Communications Branch  
Fisheries and Oceans Canada | Government of Canada  
[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca) | **NEW:** Telephone: 613-949-1099

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Fisheries and Oceans Canada  
Pêches et Océans Canada

## News Release

For Immediate Release

### Government of Canada announces enhancements to sea lice enforcement management in British Columbia

June x, 2019 (TBC)

Vancouver, BC

Fisheries and Oceans Canada

The Government of Canada wants Canadians to be confident that our growing aquaculture sector is environmentally sustainable and continues to be economically viable.

The demand for fish and seafood as a high-protein food source is increasing significantly world-wide, which is putting increasing pressures on wild fish populations. Currently approximately half of a seafood consumed worldwide is produced by the aquaculture industry. Ensuring that the Canadian aquaculture industry sector provides safe, high-quality Canadian products to markets in an environmentally sustainable manner is an important priority of this government at home and around the world.

Recently there have been a number of occurrences where finfish aquaculture operations were not operating in compliance with DFO requirements regarding sea lice. It has also become apparent that currently available enforcement tools are not sufficient to easily enforce compliance with current regulatory requirements.

#### Today

Today, the Minister of Fisheries, Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson, announced new that DFO will be moving forward to ensure it has the required tools and staff have the mandate to require and enforce compliance with existing sea lice regulations, actions to enhance protection of wild salmon. DFO will Building on the Government of Canada's new approach to aquaculture, Fisheries and Oceans Canada will put in place new measures to minimize the risks of sea lice from salmon farms to wild salmon. This will include a review of sea lice management methods, including the be moving to strengthening the strengthen the conditions of license to align with an area-based management approach and that are supported by enable robust enforcement. Options to ensure DFO has the tools required to ensure appropriate enforcement will include ... XXXX YYYY. The Department will ensure that changes to current enforcement mechanisms will be in place in early 2020. Any possible changes to sea lice licence conditions will be scheduled for completion by 2020 in advance of the next juvenile salmon smolt outmigration.

Commented [SN1]: Will need input from Program and Pacific region on enforcement

Instances of sea lice exceeding the regulatory threshold have been relatively rare since 2011, however the Government recognizes the need to ensure that our management measures are updated to the highest international standards. In addition, To that end, the recently announced Indigenous and Multi-Stakeholder Advisory Body (IMAB), to be chaired by the Deputy Minister of Fisheries and Oceans Canada, with support from the Fish Health Technical Working Group, will be asked to provide advice that will inform potential further changes to the management and research of sea lice in British Columbia (BC). This will include possible changes to the current conditions of licence.

The Department will also continue to work with and consult the Province of British Columbia, Indigenous partners, environmental non-governmental organizations, industry, and interested partners on integrated pest management

Canada

approaches to diversify tools and test new technologies that can help to strictly limit the potential impacts of sea lice to wild salmon.

#### Quotes

"OurThe Government recognizes that, following the precautionary approach, it is time to review our sea lice management measures to ensure they are updated to the highest international standards. We also recognize the need to ensure that enforcement tools available to our staff are effective. In partnership with the Province of British Columbia, Indigenous partners, industry, environmental groups, and other stakeholders, wWe are committed to taking action now to address concerns and minimize the risks for that have been raised wildregarding sea lice and wild salmon."

*Minister of Fisheries, Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson*

#### Quick Facts

- Sea lice occur naturally in the marine environment and their abundance is influenced by seasonal and year-to-year variations in ocean salinity, temperature and other environmental conditions. DFO's conditions of licence for aquaculture require strict ongoing inspection of farmed fish to monitor sea lice levels and implementation of management measures so that sea lice numbers are at their lowest during the outmigration of wild juvenile salmon, from March 1 to June 30 of each year.
- During most years, more than 90 per cent of BC farm sites have been below the regulatory sea lice threshold during the wild salmon outmigration period; however, sea lice counts can be variable and are affected by environmental conditions. In the last two years, levels of sea lice exceeding the threshold have been observed in two areas on the west coast of Vancouver Island.
- These measures are further to the enhanced reporting and monitoring requirements for heart and skeletal muscle inflammation (HSMI) and jaundice syndrome, which were announced on June 4, 2019.
- As part of implementing the new approach to aquaculture management announced in December 2018, DFO is will explore a series of measures to enhance sea lice management, culminating in opening the sea lice conditions of licence. Changes to sea lice licence conditions will be scheduled for completion by 2020, in advance of the juvenile salmon smolt outmigration.
- The updated condition of licence will be consistent with the new area-based management approach. Thresholds will be more adaptable and better account for local environmental considerations and the status of wild fish populations.
- The actions announced today build on other initiatives that support a robust, science-based approach to regulating aquaculture and contribute to the sustainable development of the sector:
  - The creation of an external Advisory Committee on Aquaculture Science was announced by Minister Wilkinson on May 27, 2019 and is expected to be in place this summer.
  - A joint technology study between the Government of Canada and the Province of British Columbia is underway to evaluate and provide viable technology options for salmon farming in BC, including land-based and ocean-based closed-containment options. The results of the study will be available shortly.
  - The development of an aquaculture act will outline the scope and the authorities for aquaculture management and clarify rules and requirements that the aquaculture industry must follow.
  - The aquaculture industry is encouraged to move towards an area-based approach to aquaculture management. This will ensure that environmental, social, and economic factors are taken into consideration when identifying potential areas for aquaculture development, as well as considerations relating to migration pathways for wild salmon.




- The creation of the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) will help fish farmers adopt clean technologies for their operations to improve environmental performance. A number of projects for BC have already been announced.

#### Associated Links

- [Government of Canada takes further action to enhance aquaculture sustainability in British Columbia](#)
- [Government of Canada announces new way forward on aquaculture management and the protection of wild salmon](#)
- [Government of Canada moves to strengthen science on aquaculture ensuring protection of wild fish stocks](#)
- [Report of the Independent Expert Panel on Aquaculture Science](#)
- [Joint Statement by Ministers Wilkinson and Duncan on the Report from the Independent Expert Panel on Aquaculture Science](#)

- 30 -

#### For more information:

Jocelyn Lubczuk  
Press Secretary  
Office of the Minister of Fisheries, Oceans  
and the Canadian Coast Guard  
  
[Jocelyn.lubczuk@dfo-mpo.gc.ca](mailto:Jocelyn.lubczuk@dfo-mpo.gc.ca)

Media Relations  
Fisheries and Oceans Canada  
613-990-7537  
[Media.xncr@dfo-mpo.gc.ca](mailto:Media.xncr@dfo-mpo.gc.ca)

#### Stay Connected

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- Follow the Canadian Coast Guard on [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).
- Subscribe to receive our news releases and more via RSS feeds. For more information or to subscribe, visit [www.dfo-mpo.gc.ca/media/rss-eng.htm](http://www.dfo-mpo.gc.ca/media/rss-eng.htm).

DRAFT – NR\_AE\_SeaLiceMeasures\_2019-06-19\_1405

#### Prepared by:

Michelle Rainer, Communications Advisor (PAC Region)

Approved by:	Date & Time
Rebecca Reid, RDG Pacific	2019-06-17 18:00
Alix Dostal, DG AMD	2019-06-18 06:08
Wayne Moore, DG SRS	2019-06-18 10:15
Caroline Quinn, Director, Comms	2019-06-18 13:24
Philippe Morel, ADM AE	2019-06-18 13:54
Arran McPherson, ADM Science	2019-06-18 13:35

Marian Hubley, DG Comms	2019-06-18 17:30
SADMO	2019-06-19 09:41
DMO	
MinO	

s.23

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Thursday, June 20, 2019 4:35 PM  
**To:** McCorquodale, Brenda  
**Subject:** Suggested wording change for FH TWG

Will provide a forum for information exchange, based on the best available science (e.g. sea lice), regarding DFO's management of fish health as well as provide recommendations on improvements in this area with a focus on PRV and other pathogens and sea lice management.

These can be key questions that we ask to get this TOR right during the ADM discussion – or could be added in the comments section

Question about whether or not we should broaden the scope to include the National Aquatic Animal Health Program – CFIA lead?

Question about whether this group could try to provide recommendations of how science information can be better used to build constructive/collaborative decision making or is this the role of the Science Advisory Committee?

Question about whether or not this group should provide recommendations on future areas of research?

Question about whether or not this group should be narrowly focused on sea lice and PRV?

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**Delaney, Paula**

---

**From:** Paylor, Adrienne  
**Sent:** Thursday, June 20, 2019 5:05 PM  
**To:** Webb, Allison  
**Subject:** Nooka update

FYI

- For the current and previous production cycles, Grieg Seafoods has had difficulty managing lice abundance in their Esperanza-region farms.
- While none of the 3 sites (Esperanza, Steamer, and Hecate) went into the 2019 outmigration period over threshold, all 3 quickly went over by the end of March.
- Grieg has technically been in compliance throughout the remainder of the outmigration period via harvesting and hydrogen peroxide treatments, but have spent the entire time with average lice levels of well over the 3 motile average threshold.
- There is also evidence of persistent SLICE-tolerance in the region. A concern is that these farms have remained in compliance despite having fish with many lice, sometimes upwards of 50+ per fish.
- [REDACTED]
- DFO will request they provide a management plan that will adequately address our concerns regarding lice abundance for the next production cycle.
- DFO fish health staff was in the Esperanza area on June 18<sup>th</sup> 2019, three farms have been active this quarter in this area: Steamer Point, Esperanza and Hecate.
- DFO staff conducted a sea lice audit at Steamer Point (only site with more than three pens left so we can audit)
- DFO collected motile *L. salmonis* lice from Esperanza (no audit because will be empty by today) in order to conduct a Bioassay for SLICE and H2O2 to assess the efficacy of these therapeutants on the current crop of lice.
- No DFO audit at Hecate because less than three pens left. High lice numbers but site will be empty by end of week June 21.
- **Steamer Point** has completed a hydrogen peroxide treatment on the entire site last week ( June 13<sup>th</sup>), to control lice level. DFO fish health audit conducted on June 18<sup>th</sup> ( post hydrogen peroxide treatment) indicated that the site average lice per fish was at 24.4, well over threshold. The treatment last week appears to have knocked off the adult mobile lice but had no effect on the attached stage which has matured to mobile at the time of sampling.
- [REDACTED]

**Adrienne Paylor**

Regional Manager, Aquaculture Environmental Operations  
Fisheries and Oceans Canada / Pêches et Océans Canada  
Aquaculture Management Division / Gestion de l'aquaculture  
1520 Tamarac Street, Campbell River, BC V9W 3M5  
[Adrienne.paylor@dfo-mpo.gc.ca](mailto:Adrienne.paylor@dfo-mpo.gc.ca)

s.20(1)(b)

Telephone | Téléphone 250-286-5817  
Facsimile | Télécopieur 250-286-5837  
Government of Canada | Gouvernement du Canada

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, June 21, 2019 8:58 AM  
**To:** Webb, Allison; Rainer, Michelle  
**Subject:** Re: For revision - sea lice news release

Michelle -please call me at [REDACTED] asap. Thx

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Webb, Allison  
**Sent:** Friday, June 21, 2019 8:36 AM  
**To:** Webb, Allison  
**Subject:** FW: For revision - sea lice news release

Hi Allison,  
Michelle from Comms just called to ask if you could send your input to her RE: the attached release asap.  
Thank you, Paula

---

**From:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 20, 2019 1:12 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Subject:** FW: For revision - sea lice news release  
**Importance:** High

Hi Allison,  
Please see attached news release that has come back [REDACTED] Can you provide the input requested?  
Thanks,  
Michelele

---

**From:** Seguin, Natalie <Natalie.Seguin@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 20, 2019 12:22 PM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>; Bate, Dan <Dan.Bate@dfo-mpo.gc.ca>  
**Cc:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Mcgrath, Cheryl <Cheryl.Mcgrath@dfo-mpo.gc.ca>  
**Subject:** For revision - sea lice news release  
**Importance:** High

Hi Michelle and Dan,

Please find attached the sea lice news release, [REDACTED] We will need Program to provide input, given the change in direction from management to enforcement. We will need to run through approvals again, once we have a revised version.

Thanks.

~N

s.16(2)(c)

s.21(1)(a)

s.21(1)(b)

***Natalie Séguin***

Senior Communications Advisor | Communications Branch  
Fisheries and Oceans Canada | Government of Canada  
[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca) | **NEW:** Telephone: 613-949-1099

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Pêches et Océans Canada | Gouvernement du Canada  
[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca) | **NOUVEAU** : Téléphone : 613-949-1099

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**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Friday, June 21, 2019 9:07 AM  
**To:** Bate, Dan  
**Subject:** Fw: For revision - sea lice news release

FYI

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Friday, June 21, 2019 9:06 AM  
**To:** Rainer, Michelle  
**Cc:** Girouard, Louise  
**Subject:** Re: For revision - sea lice news release

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Rainer, Michelle  
**Sent:** Thursday, June 20, 2019 1:12 PM  
**To:** Webb, Allison  
**Subject:** FW: For revision - sea lice news release

Hi Allison,

Please see attached news release that has come back [REDACTED] Can you provide the input requested?

Thanks,  
Michlele

---

**From:** Seguin, Natalie <Natalie.Seguin@dfo-mpo.gc.ca>  
**Sent:** Thursday, June 20, 2019 12:22 PM  
**To:** Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>; Bate, Dan <Dan.Bate@dfo-mpo.gc.ca>  
**Cc:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Mcgrath, Cheryl <Cheryl.Mcgrath@dfo-mpo.gc.ca>  
**Subject:** For revision - sea lice news release  
**Importance:** High

Hi Michelle and Dan,

Please find attached the sea lice news release, [REDACTED] We will need Program to provide input, given the change in direction from management to enforcement. We will need to run through approvals again, once we have a revised version.

Thanks.

s.16(2)(c)  
s.21(1)(a)  
s.21(1)(b)

~N

***Natalie Séguin***

Senior Communications Advisor | Communications Branch  
Fisheries and Oceans Canada | Government of Canada  
[Natalie.Seguin@dfo-mpo.gc.ca](mailto:Natalie.Seguin@dfo-mpo.gc.ca) | **NEW:** Telephone: 613-949-1099

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[@FishOceansCAN](https://twitter.com/FishOceansCAN)

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No information has been removed or severed from this page



## Rainer, Michelle

---

**From:** Webb, Allison  
**Sent:** Friday, June 21, 2019 11:03 AM  
**To:** Rainer, Michelle; Doucette, Claire  
**Subject:** Re: Sea lice news release

Hi - am on an ADM call right now but want to make edits to this. [REDACTED] Won't be able to do this until 12/1230.

Sent from my BlackBerry 10 smartphone on the Bell network.

---

**From:** Rainer, Michelle  
**Sent:** Friday, June 21, 2019 10:52 AM  
**To:** Doucette, Claire; Webb, Allison  
**Subject:** Sea lice news release

Hi Allison and Claire,  
Changes made to reflect our discussion; please let me know if you have any concerns. Claire, you can hit "all markup" in the track changes section to see the changes made to the draft. MinO is red and I'm orange but I warn you it's kind of a mess!

Allison, I have pasted a clean version into the email below to make it easier for you to read on your BB (left of quick facts section as they didn't change that):

Demand for fish and seafood as a high-protein food source is increasing significantly world-wide, which is putting increasing pressures on wild fish populations. Currently approximately half of a seafood consumed worldwide is produced by the aquaculture industry. Ensuring that the Canadian aquaculture industry provides safe, high-quality products in an environmentally sustainable manner is an important priority of this government.

Recently there have been some occurrences where finfish aquaculture operations exceeded the thresholds for sea lice laid out in their licence conditions, potentially endangering wild salmon smolts during their critical spring outmigration period. While sea lice are a natural part of the ecosystem that we cannot seek to eliminate, it is our responsibility to ensure that salmon farming does not amplify the effects of sea lice on wild salmon.

Today, the Minister of Fisheries, Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson, announced that DFO will tighten up conditions of licence so that enforcement measures, including charges under the *Fisheries Act*, can be effectively implemented when sea lice-related violations occur. Currently, the language used in conditions of licence for marine finfish aquaculture in BC do not clearly state the steps companies must take when sea lice thresholds are exceeded, the tools that must be used, the timeframes for implementation or the indicators of successful implementation. [REDACTED]  
[REDACTED]  
[REDACTED]

Changes to conditions of licence will be in place in early 2020, in advance of the next juvenile salmon smolt outmigration.

s.21(1)(a)  
s.21(1)(b)

In addition, DFO is moving forward to ensure that the management of sea lice in British Columbia is informed by the knowledge and expertise of Indigenous partners, environmental non-governmental organizations, industry, the Province of British Columbia and other interested partners. We will continue to work with these groups to identify integrated pest management approaches, tools and technologies that can limit the potential impacts of sea lice to wild salmon.

Finally, the recently announced Indigenous and Multi-Stakeholder Advisory Body (IMAB), to be chaired by the Deputy Minister of Fisheries and Oceans Canada with support from the Fish Health Technical Working Group, will be asked to provide advice that will inform potential further changes to the management of sea lice in British Columbia (BC).

Taken together, the measures announced today will ensure that British Columbia's aquaculture sector operates in to the highest standards of environmental sustainability with respect to the management of sea lice.

#### **Quotes**

"Our Government recognizes that, following the precautionary approach, it is time to review our sea lice management measures to ensure they are updated to the highest international standards. We also recognize the need to ensure that our staff can effectively use all available enforcement tools. We are committed to taking action now to address concerns that have been raised regarding sea lice and wild salmon."

*Minister of Fisheries, Oceans and the Canadian Coast Guard, the Honourable Jonathan Wilkinson*

**Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Wednesday, May 22, 2019 7:46 AM  
**To:** MacDougall, Lesley; Jones, Simon  
**Subject:** Info for MIN pre brief today

[REDACTED] on sea lice in wild populations. I understood that Simon had a presentation that provided info on how many lice would it take for each salmon species to cause impacts or cause mortality? If you could provide this to Lesley to bring to the pre brief today, that would be appreciated or any other relevant summarized info on wild fish and sea lice.

Thanks,  
Allison

Sent from my BlackBerry 10 smartphone on the Bell network.

s.21(1)(a)

s.21(1)(b)

## **Webb, Allison**

---

**From:** Webb, Allison  
**Sent:** Monday, June 24, 2019 2:27 PM  
**To:** Taekema, Bernie John; Paylor, Adrienne; McConnachie, Sarah; Metcalf, Vanessa  
**Subject:** [REDACTED]

Hi Bernie – Thanks for that. Can we please chat before you do any further work on this – when you're back.

Appreciate it,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Taekema, Bernie John <BernieJohn.Taekema@dfo-mpo.gc.ca>  
**Sent:** Monday, June 24, 2019 3:10 PM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Paylor, Adrienne <Adrienne.Paylor@dfo-mpo.gc.ca>; McConnachie, Sarah <Sarah.Mcconnachie@dfo-mpo.gc.ca>; Metcalf, Vanessa <Vanessa.Metcalf@dfo-mpo.gc.ca>  
**Subject:** [REDACTED]

Hi,

[REDACTED]

[REDACTED]

[REDACTED]

Bernie.

Sent from my BlackBerry 10 smartphone on the Bell network.

s.23

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 26, 2019 7:12 AM  
**To:** Dostal, Alexandra; Fagan, Ashley; Struthers, Alistair  
**Cc:** Quinn, Caroline; Martell, D John; Goetze, Darren  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hello all – There are two separate and distinct separate changes that will be expected in future.

Changes to the COLs to ensure that the way that the COL is drafted will provide for a more prescriptive plan to manage sea lice which will make it easier to determine if the objectives of the plan have been met and if not, [REDACTED]

The other changes contemplated to the COL require discussions with ENGOs, FN, industry etc and putting them out in a MR without consultation would cause significant issues in terms of being consultative in our approaches. However, they will align with Area Based Management and I would expect, [REDACTED]

If this isn't clear, please call [REDACTED] and I'll explain.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

---

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 10:03 AM  
**To:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

I'll defer to Allison as the subject matter expert on what language she proposes if that is ok?

**Alix Dostal**

613-993-1884

s.19(1)  
s.21(1)(a)  
s.21(1)(b)

**From:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 10:01 AM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

Thanks Alix. Can you elaborate on what the 'suite of other options available' would be? It's not clear to me if it's not monitoring.....We are getting pushed to add more precision throughout the news release, so just anticipating what comments we'll receive if we remove this language.

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** June-26-19 6:25 AM  
**To:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

Hi Ashley,

Two quick things – I don't believe that the measures contemplated in the NR are reg changes, rather conditions of license changes. Second, regarding the sentence on the current measures (below) that you added. I am not sure that it's the monitoring or auditing that I would refer to in the NR, but rather the suite of options available should the plan not be implemented or effective. I defer though to Allison from Pacific region, copied here who would have better insights to share than me on how best to frame.

Currently, if an aquaculture producer exceeds the sea lice threshold they must develop a mitigation plan to address the issue; however, there is no requirement within the conditions of licence to allow for monitoring or auditing the effectiveness of this plan.

**Alix Dostal**

613-993-1884

**From:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Sent:** Tuesday, June 25, 2019 8:24 PM  
**To:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>; Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Moore, Wayne <Wayne.Moore@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Cc:** Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Mcgrath, Cheryl <Cheryl.Mcgrath@dfo-mpo.gc.ca>; Willis, Timothy <Timothy.Willis@dfo-mpo.gc.ca>; Nesseth, Megan <Megan.Nesseth@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

Thanks Alistair. So the enforcement measures under the conditions of licence are under the purview of the Minister. What changes mentioned within the NR would be under regs, if any?

---

**From:** Struthers, Alistair  
**Sent:** Tuesday, June 25, 2019 8:18 PM  
**To:** Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren  
**Cc:** Parsons, Jay; Quinn, Caroline; Mcgrath, Cheryl; Willis, Timothy; Nesseth, Megan; Martell, D John  
**Subject:** Re: FYI FOR DGs - Revised Sea Lice NR

Licences conditions are, but the regs are not (they are GIC).

Alistair

----- Original message -----

From: "Fagan, Ashley" <[Ashley.Fagan@dfo-mpo.gc.ca](mailto:Ashley.Fagan@dfo-mpo.gc.ca)>

Date: 2019-06-25 9:11 PM (GMT-04:00)

To: "Dostal, Alexandra" <[Alexandra.Dostal@dfo-mpo.gc.ca](mailto:Alexandra.Dostal@dfo-mpo.gc.ca)>, "Moore, Wayne" <[Wayne.Moore@dfo-mpo.gc.ca](mailto:Wayne.Moore@dfo-mpo.gc.ca)>, "Goetze, Darren" <[Darren.Goetze@dfo-mpo.gc.ca](mailto:Darren.Goetze@dfo-mpo.gc.ca)>

Cc: "Struthers, Alistair" <[Alistair.Struthers@dfo-mpo.gc.ca](mailto:Alistair.Struthers@dfo-mpo.gc.ca)>, "Parsons, Jay" <[Jay.Parsons@dfo-mpo.gc.ca](mailto:Jay.Parsons@dfo-mpo.gc.ca)>, "Quinn, Caroline" <[Caroline.Quinn@dfo-mpo.gc.ca](mailto:Caroline.Quinn@dfo-mpo.gc.ca)>, "Mcgrath, Cheryl" <[Cheryl.Mcgrath@dfo-mpo.gc.ca](mailto:Cheryl.Mcgrath@dfo-mpo.gc.ca)>, "Willis, Timothy" <[Timothy.Willis@dfo-mpo.gc.ca](mailto:Timothy.Willis@dfo-mpo.gc.ca)>, "Nesseth, Megan" <[Megan.Nesseth@dfo-mpo.gc.ca](mailto:Megan.Nesseth@dfo-mpo.gc.ca)>, "Martell, D John" <[John.Martell@dfo-mpo.gc.ca](mailto:John.Martell@dfo-mpo.gc.ca)>

Subject: Re: FYI FOR DGs - Revised Sea Lice NR

Hi all,

Grateful if you could please

advise. Thanks!

Sent from my BlackBerry 10 smartphone on the Bell network.

**From:** Fagan, Ashley

**Sent:** Tuesday, June 25, 2019 11:26 AM

**To:** Dostal, Alexandra; Moore, Wayne; Goetze, Darren

**Cc:** Struthers, Alistair; Parsons, Jay; Quinn, Caroline; Mcgrath, Cheryl; Willis, Timothy; Nesseth, Megan; Martell, D John

**Subject:** FYI FOR DGs - Revised Sea Lice NR

Hi Alix and Wayne and Darren,

There have been significant changes made to the sea lice news release following discussions between the DM and Minister. The revised news release now has a significant focus on sea lice enforcement.

As the attached version has been approved by the DM and the Minister, with input from Rebecca Reid, we are sharing with you for information.

Please confirm you are ok with my suggestion in the quick facts.

Many thanks,

Ashley

Ashley Fagan

Senior Communications Advisor | Conseillère principale en communications

Fisheries and Oceans Canada | Pêches et Océans Canada

[ashley.fagan@dfo-mpo.gc.ca](mailto:ashley.fagan@dfo-mpo.gc.ca)

613-990-0636 \*\*\*NEW\*\*\*

s.21(1)(a)

s.21(1)(b)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 26, 2019 7:23 AM  
**To:** Fagan, Ashley  
**Cc:** Dostal, Alexandra  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

No we would set those.

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

**From:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 10:21 AM  
**To:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Cc:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

So would the changes to the COL require the producers to provide the metrics to DFO, or it allows DFO to request/seek the metrics ourselves?

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** June-26-19 10:17 AM  
**To:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Cc:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

Hi – This isn't exactly correct [REDACTED] It is more about not having clear metrics to evaluate the effectiveness of the plan and determine whether the objectives of the plan have been met. The current COL only asks for a plan to be completed. We do audit and monitor currently for effectiveness, but don't have an objective standard to monitor against.

We could say something about having more stringent requirements for the plan including metrics against which to better evaluate effectiveness in managing sea lice.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture  
Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
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[Allison.webb@dfo-mpo.gc.ca](mailto:Allison.webb@dfo-mpo.gc.ca)

s.21(1)(a)

s.21(1)(b)



**From:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 10:12 AM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

Thanks.

Allison, here is the latest text on that point. Grateful if you could provide necessary revisions. [REDACTED]

- Currently, aquaculture producers that exceed the sea lice threshold must develop a mitigation plan to address the issue; however, the conditions of licence do not require DFO to monitor or audit the effectiveness of this plan.

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** June-26-19 10:03 AM  
**To:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

I'll defer to Allison as the subject matter expert on what language she proposes if that is ok?

**Alix Dostal**

613-993-1884

**From:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 10:01 AM  
**To:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>; Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
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**Cc:** Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Goetze, Darren <Darren.Goetze@dfo-mpo.gc.ca>  
**Subject:** RE: FYI FOR DGs - Revised Sea Lice NR

s.21(1)(a)

s.21(1)(b)

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**Cc:** Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>; Mcgrath, Cheryl <Cheryl.Mcgrath@dfo-mpo.gc.ca>; Willis, Timothy <Timothy.Willis@dfo-mpo.gc.ca>; Nesseth, Megan <Megan.Nesseth@dfo-mpo.gc.ca>; Martell, D John <John.Martell@dfo-mpo.gc.ca>  
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**Sent:** Tuesday, June 25, 2019 8:18 PM  
**To:** Fagan, Ashley; Dostal, Alexandra; Moore, Wayne; Goetze, Darren  
**Cc:** Parsons, Jay; Quinn, Caroline; Mcgrath, Cheryl; Willis, Timothy; Nesseth, Megan; Martell, D John  
**Subject:** Re: FYI FOR DGs - Revised Sea Lice NR

Licences conditions are, but the regs are not (they are GIC).

Alistair

s.21(1)(a)

s.21(1)(b)

----- Original message -----

**From:** "Fagan, Ashley" <Ashley.Fagan@dfo-mpo.gc.ca>  
**Date:** 2019-06-25 9:11 PM (GMT-04:00)  
**To:** "Dostal, Alexandra" <Alexandra.Dostal@dfo-mpo.gc.ca>, "Moore, Wayne" <Wayne.Moore@dfo-mpo.gc.ca>, "Goetze, Darren" <Darren.Goetze@dfo-mpo.gc.ca>  
**Cc:** "Struthers, Alistair" <Alistair.Struthers@dfo-mpo.gc.ca>, "Parsons, Jay" <Jay.Parsons@dfo-mpo.gc.ca>, "Quinn, Caroline" <Caroline.Quinn@dfo-mpo.gc.ca>, "Mcgrath, Cheryl" <Cheryl.Mcgrath@dfo-mpo.gc.ca>, "Willis, Timothy" <Timothy.Willis@dfo-mpo.gc.ca>, "Nesseth, Megan" <Megan.Nesseth@dfo-mpo.gc.ca>, "Martell, D John" <John.Martell@dfo-mpo.gc.ca>  
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**Subject:** FYI FOR DGs - Revised Sea Lice NR

Hi Alix and Wayne and Darren,

There have been significant changes made to the sea lice news release following discussions between the DM and Minister. The revised news release now has a significant focus on sea lice enforcement.

As the attached version has been approved by the DM and the Minister, with input from Rebecca Reid, we are sharing with you for information. [REDACTED]

[REDACTED] Please confirm you are ok with my suggestion in the quick facts.

Many thanks,

Ashley

Ashley Fagan

Senior Communications Advisor | Conseillère principale en communications

Fisheries and Oceans Canada | Pêches et Océans Canada

[ashley.fagan@dfo-mpo.gc.ca](mailto:ashley.fagan@dfo-mpo.gc.ca)

613-990-0636 \*\*\*NEW\*\*\*

s.21(1)(a)

s.21(1)(b)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Wednesday, June 26, 2019 9:10 AM  
**To:** Dostal, Alexandra; Fagan, Ashley; Morel, Philippe; Reid, Rebecca; Thomson, Andrew; Quinn, Caroline  
**Cc:** Struthers, Alistair  
**Subject:** RE: Sea lice announcement

Hi Alix - I'm not sure that we had contemplated any calls at this point and our staff are meeting with the ENGOs today and sea lice is a discussion item and we also met with industry as part of our regular processes a week or so ago and discussed this in general terms. We also raised with BC.

If time is available, we could make a limited number of calls, but it may not be as critical as in some other instances depending on what gets announced. I'll be in a better position to evaluate that once the MR lands.

Thanks,  
Allison

Allison Webb, Director / Directrice  
Aquaculture Management / Gestion de l'aquaculture Fisheries Management Branch / Direction de la gestion des pêches  
Fisheries and Oceans Canada / Pêches et Océans Canada  
200 - 401 Burrard St / Rue Burrard, Vancouver BC / C.B. V6C 3S4 Canada  
604-666-7009  
Allison.webb@dfo-mpo.gc.ca

-----Original Message-----

**From:** Dostal, Alexandra <Alexandra.Dostal@dfo-mpo.gc.ca>  
**Sent:** Wednesday, June 26, 2019 11:20 AM  
**To:** Fagan, Ashley <Ashley.Fagan@dfo-mpo.gc.ca>; Morel, Philippe <Philippe.Morel@dfo-mpo.gc.ca>; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Quinn, Caroline <Caroline.Quinn@dfo-mpo.gc.ca>  
**Cc:** Struthers, Alistair <Alistair.Struthers@dfo-mpo.gc.ca>  
**Subject:** Sea lice announcement

Hi there,

I am not sure what the timing is for this announcement, but I wanted to check in if there were any plans for precalls to any stakeholders for heads up? If not, should we be considering any for discussion with dmo (or recommending any to mino)?

Sorry if this has already been sorted but thought I would check in just in case.

Alix

Sent from my iPhone

---

**Wilkinson, Davida**

**From:** Paylor, Adrienne  
**Sent:** Thursday, June 27, 2019 11:29 AM  
**To:** MacDougall, Lesley; McCorquodale, Brenda; Webb, Allison; Parsons, Jay; Dostal, Alexandra  
**Subject:** RE: Update [REDACTED] & CRWG mtg

Only to add: Recommendations on sea lice management include moving to the Norwegian threshold of 0.1 females and requiring farms to de-populate if over in during the out migration. We explained we do not have the authority to order destruction so that may come up again from Ecojustice. Ecojustice complained that the department has not responded to their letter regarding sea lice and [REDACTED] asked that DFO make a public statement that sea lice on farms are a serious problem for wild fish.

---

**From:** MacDougall, Lesley  
**Sent:** June-27-19 10:32 AM  
**To:** McCorquodale, Brenda; Webb, Allison; Parsons, Jay; Dostal, Alexandra  
**Cc:** Paylor, Adrienne [REDACTED]  
**Subject:** RE: Update [REDACTED] & CRWG mtg

Not a lot to add except that Mark and Kyle's presentation also demonstrated what information had already been presented at the CSAS PRV meeting, to address [REDACTED] concerns that we had been holding information back at the CSAS.

---

**From:** McCorquodale, Brenda  
**Sent:** 2019-June-27 9:56 AM  
**To:** Webb, Allison; Parsons, Jay; Dostal, Alexandra  
**Cc:** MacDougall, Lesley; Paylor, Adrienne  
**Subject:** Update [REDACTED] & CRWG mtg

Hi all - just a quick note to update you on the meeting we had today with the CRWG and [REDACTED]. We had a presentation from BC, and one from ECCC with respect to end of pipe issues from processing plants. Sorry Lesley we forgot to raise it with you when you came in, but BC reported on their new standards, and reported that they use levels of coci(?) as a surrogate for whether the treatment (colloquially) kills stuff. CRWG were skeptical as to whether new treatments are killing viruses and parasites and asked if BC was going to "check if it's working." BC said they would defer to DFO on this - so we will need to discuss. We chatted about the TWGs. [REDACTED] is disappointed they are not yet up and running and was under the understanding that they would provide advice on the PRV decision. I said my understanding was that the focus was more broad but there could be interim recommendations. [REDACTED] would like to see the groups appointed and meeting in July. We had a discussion about seal lice. The CRWG provided specific recommendations related to: improving tools & enforceability; new COL; and Science priorities. [REDACTED] referenced Ecojustice's letter to the Minister.

We had a discussion about PRV Science with lots of Science participation. Science presented on recent findings (Kyle, Mark, Emiliano, Kristi). CRWG were appreciative of the information, with [REDACTED] feeling that it generally was supporting her concerns. There was some disagreement in that [REDACTED] pressed DFO to agree that results on PRV detection were showing that transmission was happening farm to farm, when Science and DFO did not agree with that interpretation. [REDACTED] again pressed DFO to provide info redacted from emails in an ATIP. ENGOs ended saying they really feel there is a need for a more collaborative, transparent process. Lesley, Adrienne- anything to add? Meeting notes are being produced. Brenda

Regional Manager, Enhanced Sustainability Initiative, Aquaculture Management Division

Fisheries and Oceans Canada

Gestionnaire régionale des ressources, Direction des pêches

Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8

Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)

Telephone | Téléphone: [250-754-0367](tel:250-754-0367)

s.19(1)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, June 28, 2019 9:36 AM  
**To:** Fagan, Ashley  
**Subject:** RE: FYI Sea Lice - Final NR

Thanks for including me in this. We can begin to anticipate questions!

  
Allison

---

**From:** Fagan, Ashley  
**Sent:** June 28, 2019 8:35 AM  
**To:** Dostal, Alexandra; Moore, Wayne; Struthers, Alistair; Parsons, Jay; Webb, Allison; Goetze, Darren; Martell, D John  
**Cc:** Seguin, Natalie; Rainer, Michelle; Mcgrath, Cheryl; Quinn, Caroline; Richter, Julie; Nesseth, Megan  
**Subject:** FYI Sea Lice - Final NR

Hi all,

Here is the final news release on sea lice. There has been a bit of back and forth on language for a few items, but it looks like we've finally landed. Thanks to all of your help and reviews on this one.

This will be issued to B.C. media today ---10am PAC time.

Ashley

Ashley Fagan  
Senior Communications Advisor | Conseillère principale en communications  
Fisheries and Oceans Canada | Pêches et Océans Canada  
ashley.fagan@dfo-mpo.gc.ca  
613-990-0636 \*\*\*NEW\*\*\*

s.19(1)

**Rainer, Michelle**

---

**From:** Rainer, Michelle  
**Sent:** Friday, June 28, 2019 9:59 AM  
**To:** Webb, Allison  
**Cc:** Girouard, Louise; Paylor, Adrienne; Doucette, Claire  
**Subject:** Final sea lice NR  
**Attachments:** NR\_AE\_SeaLiceMeasures\_2019-06-28\_0939\_MINOfinal.docx

Hi Allison,  
Please find the final version attached; it will be released in the next 30 minutes.  
Regards,  
Michelle

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Friday, June 28, 2019 9:38 AM  
**To:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** Sea lice NR

Hi there - In case you need to reach me today, I am available at [REDACTED] I don't have any mobile service where I am. The email is working on webmail, but isn't 100% reliable. As you are aware, there has been much back and forth on this release. I have some residual concerns about its accuracy, but we can help with interpretation if required. Tx, Allison

s.19(1)





Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

**News Release**

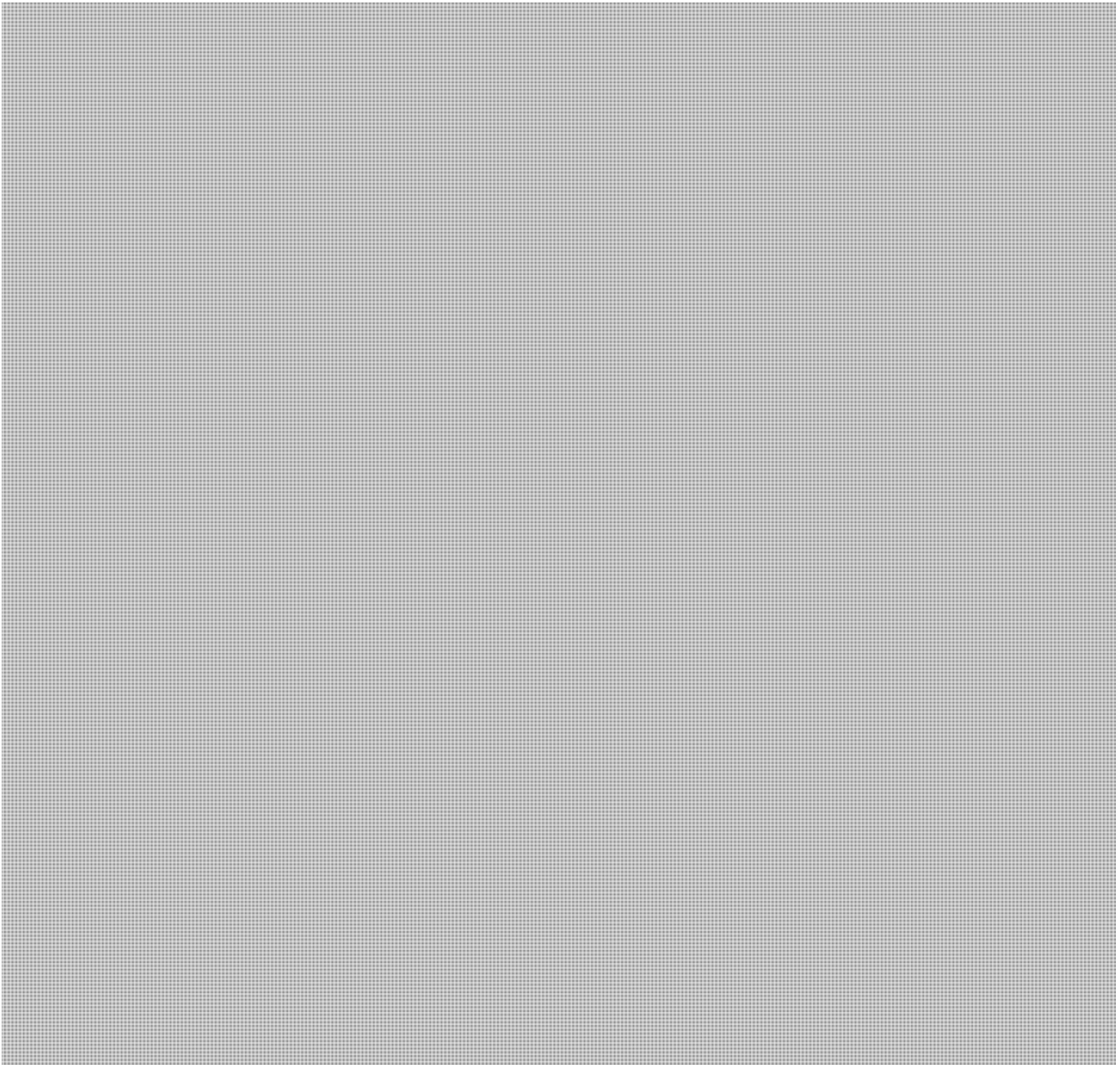
For Immediate Release

**Government of Canada announces enhancements to sea lice enforcement in British Columbia**

June 28, 2019

Vancouver, BC

Fisheries and Oceans Canada



Available at:

<https://www.canada.ca/en/fisheries-oceans/news/2019/06/government-of-canada-announces-enhancements-to-sea-lice-enforcement-in-british-columbia.html>

s.68(a)

Canada

**Pages 619 to / à 620  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

## **Webb, Allison**

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**From:** Webb, Allison  
**Sent:** Friday, June 28, 2019 10:04 AM  
**To:** Rainer, Michelle  
**Cc:** Girouard, Louise; Paylor, Adrienne; Doucette, Claire  
**Subject:** RE: Final sea lice NR

Thx. I already got it from NHQ and sent it to my team. That's why I was sending the note below after I had read the release from Ashley. I've been working on it with her this week while in Ottawa.

---

**From:** Rainer, Michelle  
**Sent:** June 28, 2019 9:58 AM  
**To:** Webb, Allison  
**Cc:** Girouard, Louise; Paylor, Adrienne; Doucette, Claire  
**Subject:** Final sea lice NR

Hi Allison,  
Please find the final version attached; it will be released in the next 30 minutes.  
Regards,  
Michelle

---

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Friday, June 28, 2019 9:38 AM  
**To:** Girouard, Louise <Louise.Girouard@dfo-mpo.gc.ca>; Rainer, Michelle <Michelle.Rainer@dfo-mpo.gc.ca>  
**Subject:** Sea lice NR

Hi there - In case you need to reach me today, I am available at [REDACTED] I don't have any mobile service where I am. The email is working on webmail, but isn't 100% reliable. As you are aware, there has been much back and forth on this release. I have some residual concerns about its accuracy, but we can help with interpretation if required. Tx, Allison

s.19(1)

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, June 28, 2019 10:22 AM  
**To:** Choi, Shirley  
**Subject:** RE: FYI Sea Lice - Final NR

Sounds good. Tx.

---

**From:** Choi, Shirley  
**Sent:** June 28, 2019 10:21 AM  
**To:** Webb, Allison  
**Subject:** RE: FYI Sea Lice - Final NR

Perfect! I'll update the Sea Lice section with this info.

**From:** Webb, Allison <Allison.Webb@dfo-mpo.gc.ca>  
**Sent:** Friday, June 28, 2019 10:20 AM  
**To:** Choi, Shirley <Shirley.Choi@dfo-mpo.gc.ca>  
**Subject:** FW: FYI Sea Lice - Final NR

FYI - already sent to Adrienne, Brenda et al. Tx

---

**From:** Fagan, Ashley  
**Sent:** June 28, 2019 8:35 AM  
**To:** Dostal, Alexandra; Moore, Wayne; Struthers, Alistair; Parsons, Jay; Webb, Allison; Goetze, Darren; Martell, D John  
**Cc:** Seguin, Natalie; Rainer, Michelle; Mcgrath, Cheryl; Quinn, Caroline; Richter, Julie; Nesseth, Megan  
**Subject:** FYI Sea Lice - Final NR

Hi all,

Here is the final news release on sea lice. There has been a bit of back and forth on language for a few items, but it looks like we've finally landed. Thanks to all of your help and reviews on this one.

This will be issued to B.C. media today ---10am PAC time.

Ashley

Ashley Fagan  
Senior Communications Advisor | Conseillère principale en communications  
Fisheries and Oceans Canada | Pêches et Océans Canada  
[ashley.fagan@dfo-mpo.gc.ca](mailto:ashley.fagan@dfo-mpo.gc.ca)  
613-990-0636 \*\*\*NEW\*\*\*

## Webb, Allison

---

**From:** Webb, Allison  
**Sent:** Friday, June 28, 2019 10:30 AM  
**To:** McCorquodale, Brenda  
**Subject:** RE: Sea lice NR

yes, please and thanks. For some reason I can't access my lists on the webmail.

Thanks so much,  
A

---

**From:** McCorquodale, Brenda  
**Sent:** June 28, 2019 10:27 AM  
**To:** Webb, Allison  
**Subject:** RE: Sea lice NR

Do you want me to send it out internally too?

<https://www.canada.ca/en/fisheries-oceans/news/2019/06/government-of-canada-announces-enhancements-to-sea-lice-enforcement-in-british-columbia.html>

It's available here.

B

Brenda McCorquodale

Regional Manager, Enhanced Sustainability Initiative, Aquaculture Management Division  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des pêches  
Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: 250-754-0367

---

**From:** Webb, Allison  
**Sent:** Friday, June 28, 2019 10:21 AM  
**To:** McCorquodale, Brenda  
**Subject:** Sea lice NR

Hi Brenda - I think that this should have been issued by now as it was supposed to go at 10am, but be good to check. If so, we should send out to all of our usual contacts today if we can and if not, on Tues.

Thanks so much,  
Allison

**pac.prmc / pac.urpcm (DFO/MPO)**

---

**From:** pac.prmc / pac.urpcm (DFO/MPO)  
**Sent:** Friday, June 28, 2019 4:11 PM  
**To:** Webb, Allison  
**Cc:** Delaney, Paula  
**Subject:** FW: Draft\_Reply\_2019-001-01064.docx  
**Attachments:** 2019-001-01064.pdf; MECTS-#4045360-v11-Draft\_Reply\_2019-001-01064.docx

Hi Allison,

This came back to us because Health Canada had some concerns and, after speaking with Adrienne, offered some edits. I also threw in a couple of paragraphs from today's news release about sea lice. We might be over answering, since the incoming is specifically about the use of lufenuron, but I feel like MINO might want the announcement in there. Looking for your advice?

We're looking for your approval on this draft response **by 4 pm Tuesday, but sooner if at all possible.**

Please use track changes to insert any necessary edits in the attached document, and FORWARD the document to XPAC PRMCU.

Your review should also include technical accuracy and consistency with policy direction.

**If you think someone else in Pacific Region or in Legal Services** must approve and they aren't on our approval list, **please advise us ASAP and we will forward the documents for their approval.**

Thanks,

Heather

**\*\*Please direct all e-mails regarding ministerial correspondence to XPAC PRMCU.\*\***

Candace McGuire and Heather Fowlie

Manager, Pacific Region Ministerial Correspondence Unit  
Fisheries and Oceans Canada/Government of Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

Gestionnaires de la correspondance ministériel  
Pêches et Océans Canada/Gouvernement du Canada  
[XPACPRMCU@dfo-mpo.gc.ca](mailto:XPACPRMCU@dfo-mpo.gc.ca) Tel 604-666-0823

# Ministerial Correspondence / Correspondance ministérielle Approval Form / Formulaire d'approbation

MCCU DOCKET # / N° DU DOSSIER UCCM : 2019-001-01064	MCCU CONTACT / RESPONSABLE À L'UCCM : BARBARA MALONEY EDITOR : SM
REPLY BY MINO / RÉPONSE DU MINISTRE	

## DATE AND DEADLINES / DATE ET ÉCHÉANCE

DUE DATE TO MINO / ÉCHÉANCE AU CM : (mm-dd-yyyy / mm-jj-aaaa)	05/27/2019	DATE RECEIVED IN MCCU / DATE DE RÉCEPTION À L'UCCM : (mm-dd-yyyy / mm-jj-aaaa)	04/26/2019
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## COMMENTS / APPROACH – COMMENTAIRES / APPROCHE

Reviewed and edited by Manisha Mehrotra, for Mary Jane Ireland, Director General, Veterinary Drugs Directorate, Health Canada

## APPROVALS / APPROBATIONS

Level / Niveau	Name, Title and Sector / Nom, titre et secteur	Assigned Date / Date fixée	Date Due / Échéance	Date Approved / Date d'approbation	Changes / Modifications
Director	Brenda McCorquodale for Allison Webb Director, Aquaculture Management Div., Fisheries Management Branch			April 29, 2019	Yes
	Adrienne Paylor Regional Manager, Aquaculture Environmental Operations, Fisheries Management			June 28, 2019	No
Director	Allison Webb Director, Aquaculture Management Div., Fisheries Management Branch				
Regional Director / Directeur(trice) régional(e)	Andrew Thomson Regional Director, Fisheries Management Branch			May 1, 2019	No
<b>IF NECESSARY / SI NÉCESSAIRE</b>					
ADM / RDG / DC / CO / AC SMA / DGR / SA / BC / CA	Rebecca Reid, Regional Director General, Pacific Region			May 2, 2019	
Indigenous Affairs / Affaires autochtones Legal / Services juridiques IGA / AI	Robert Lamirande, DG, IARD	May 15, 2019	May 17, 2019	May 16, 2019	No
<b>IF / SI PROVINCIAL / TERRITORIAL</b>					
DM / SM					
PCO / BCP					

## OTHER CONSULTATIONS / AUTRES CONSULTATIONS

INFO COPIES TO / COPIES POUR INFORMATION À (Office, Branch, Date / Bureau, direction, date)	DEVELOPED WITH SME(S) OR OTHER STAKEHOLDER(S) / ÉLABORÉ AVEC EXPERT(S) EN LA MATIÈRE OU AUTRE(S) INTERVENANT(S) (Name, Title, Branch, Date / Nom, titre, direction, date)
•	<ul style="list-style-type: none"> <li>Manager, Ministerial Correspondence, Pacific Region</li> <li>Adrienne Paylor, Regional Manager, Aquaculture Environmental Operations, Fisheries Management (Input, April 29)</li> </ul>
OGD / AMG - (Name, Title, Branch, Date / Nom, titre, direction, date)	
•	

## FOR MCCU USE / RÉSERVÉ À L'UCCM

b.c.c. / Cci - (Name, Department / Nom, ministère)	c.c. - (Name, email address / contact info / Nom, courriel, coordonnées)
• Todd Johansson, DFO	•

- 2 -

<ul style="list-style-type: none"><li>• David Didluck, DFO</li><li>• Adrienne Paylor, DFO</li><li>• PAC MCU</li><li>• <a href="mailto:Jonathan.Wilkinson@parl.gc.ca">Jonathan.Wilkinson@parl.gc.ca</a></li><li>•</li></ul>	
ATTACHMENTS TO RESPONSE / PIÈCES JOINTES À LA RÉPONSE	
<ul style="list-style-type: none"><li>•</li></ul>	

No information has been removed or severed from this page



Elected Councillor Joe Martin  
Tla-o-qui-aht First Nation



Dear Mr. Martin:

Thank you for your correspondence of April 25, 2019, regarding use of the drug Lufenuron in response to sea lice on salmon farms in Clayoquot Sound.

Fisheries and Oceans Canada (DFO) shares your concern for wild salmon. DFO fish health specialists and veterinarians conduct more than 160 fish health and sea lice audits each year on net pen salmon farms operating in British Columbia's marine environment. Diagnostic services are provided by an accredited animal health laboratory.

The release of veterinary drugs through the Emergency Drug Release (EDR) program for use in aquaculture is carefully managed by Health Canada in consultation with other federal and provincial departments to ensure responsible use of the drug. With regards to the authorization for the use of Lufenuron in Clayoquot sound under the EDR program, DFO was consulted and was supportive. Given the shared oversight on this matter, I have forwarded a copy of your letter to the Minister of Health, the Honourable Ginette Petitpas Taylor, for consideration.

The Department, the Province of British Columbia, industry and academics are continuing to research and develop alternative methods to manage sea lice. The rotational use of alternative methods and technologies is part of an integrated pest management approach. This approach has been demonstrated to reduce the need for drugs/pesticides in the ocean environment and prevent the development of resistance while minimizing environmental impacts and risks to wild fish.

DFO's Environmental management reports for aquaculture in British Columbia website includes information on the Department's work to manage disease and parasites, reduce disease risks and treat outbreaks.

The Department is working to ensure that aquaculture practices consider, assess and mitigate impacts on the environment. This includes updating DFO's risk management framework for aquaculture, which will embody a clear understanding of unacceptable harm. The update will embrace precautionary approaches where uncertainty exists and will fully engage the public and Indigenous peoples. The Department will also be initiating an economic and technological feasibility study with respect to alternative technologies including closed containment aquaculture.

- 2 -

As announced on June 28, 2018 DFO will be moving to strengthen the conditions of licence for finfish aquaculture in British Columbia. This will ensure that, in addition to aquaculture farms having plans to deal with sea lice occurrences above regulatory thresholds, DFO will have the appropriate enforcement tools to respond quickly if such plans are not followed, effective, or successful. These changes will be in place in early 2020, in advance of the next juvenile salmon smolt outmigration in British Columbia, when wild juvenile salmon are at greatest risk from sea lice.

Along with strengthening DFO's ability to enforce regulations, other actions are being taken to better address sea lice. We are creating an Indigenous and Multi-Stakeholder Advisory Body (IMAB), to be chaired by the Deputy Minister of Fisheries and Oceans Canada, with support from the Fish Health Technical Working Group. This group will be asked to provide advice that could inform further research and changes to the management of sea lice in British Columbia.

DFO will also continue to consult and work with the Province of British Columbia, Indigenous partners, environmental non-governmental organizations, industry, and interested partners on pest management approaches and potential new technologies that can help to strictly address potential impacts of sea lice to wild salmon.

If the Tla-o-qui-aht First Nation has further questions, I encourage you to contact Todd Johansson, Senior Aquaculture Management Coordinator, Fisheries and Oceans Canada, at < [Todd.Johansson@dfo-mpo.gc.ca](mailto:Todd.Johansson@dfo-mpo.gc.ca) > or Dr. Mary Jane Ireland, Director General, Veterinary Drugs Directorate, Health Canada, at < [Mary-Jane.Ireland@canada.ca](mailto:Mary-Jane.Ireland@canada.ca) >.

I believe we can continue to work to encourage greater sustainability in aquaculture, and to support the recovery of wild salmon.

Thank you for writing.

Yours sincerely,

Jonathan Wilkinson, P.C., M.P.  
Minister of Fisheries, Oceans and the Canadian Coast Guard

c.c.: The Honourable Ginette Petitpas Taylor  
Minister, Health Canada

**2019-001-01064**

**Minister / Ministre (DFO/MPO)**

---

**From:** Wilkinson, Jonathan - Assistant 1 <Jonathan.Wilkinson.A1@parl.gc.ca> on behalf of  
Wilkinson, Jonathan - M.P. <Jonathan.Wilkinson@parl.gc.ca>  
**Sent:** April-25-19 7:36 PM  
**To:** Minister / Ministre (DFO/MPO)  
**Cc:** Hill, Johanna; Simons, Fiona; Anderson, Randi A  
**Subject:** FW: Re Lufeneron

-----Original Message-----

**From:** Joe Martin <[REDACTED]>  
**Sent:** Thursday, April 25, 2019 6:48 PM  
**To:** Wilkinson, Jonathan - M.P. <Jonathan.Wilkinson@parl.gc.ca>  
**Cc:** [REDACTED]  
**Subject:** Re Lufeneron

Hello Jonathan Wilkinson,

Tla-o-qui-aht First Nation is opposed to the use of the chemical lufeneron in or near our traditional territory. The chemical lufeneron, used to control sea lice on salmon farms must not be used in Clayoquot Sound on the west coast of Vancouver Island . This chemical is banned in Norway and Scotland for very good reasons and the same must be applied here in Clayoquot Sound, and especially in Tla-o-qui-aht First Nation territory, which is an area also celebrated internationally as a Tribal Park.

Joe Martin  
Elected councillor of the Tlaoquaht First Nation

s.19(1)

## Choi, Shirley

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**From:** Choi, Shirley  
**Sent:** Friday, June 28, 2019 5:00 PM  
**To:** Webb, Allison  
**Cc:** Wilkinson, Davida; Delaney, Paula  
**Subject:** FW: Tasking//2019-009-00311//SN MIN - Meeting with BC Salmon Farmer's Association - July 3rd 9am FIRM  
**Attachments:** 2019-009-00311 - SN MIN-BCSFA June 2019.docx

Hi Allison,

Here's a draft of the SN for the Minister's meeting with the BCSFA. We've checked with the RD's office to see if there's a meeting date or an original request from the BCSFA for the meeting, but there was nothing provided. This SN was based on the recommended issues in the original tasking, but I thought that his recent June 4 announcement may also be raised. Brenda provided some updates regarding the various working groups, but I had addressed the issue based on all the elements of his announcement (see item 4), rather than in detail about each working group. Happy to incorporate them if you prefer.

I used my best guess as to what the Minister's objectives may be for each issue. Unfortunately, without having the opportunity to sit in some of the industry meetings, I'm not aware of what the BCSFA's concerns may be. Hopefully it won't require too many revisions, but if there's anything else you'd like to see or would like me to change, please let me know!

The deadline is now July 3, 9am.

Thanks and  😊

## Shirley Choi

Regional Program Coordinator | coordinatrice régionale du programme  
Fisheries and Aquaculture Clean Technology Adoption Program | Programme d'adoption des technologies propres pour les pêches et l'aquaculture

Fisheries Management | Direction des pêches  
Department of Fisheries and Oceans | Pêches et Océans Canada  
200-401 Burrard Street | 401, rue Burrard, bureau 200  
Vancouver, BC | C.-B. V6C 3S4  
Phone | téléphone: (604) 666-5783

[DFO.PAC.FACTAP-PATTPA.PAC.MPO@dfo-mpo.gc.ca](mailto:DFO.PAC.FACTAP-PATTPA.PAC.MPO@dfo-mpo.gc.ca)

<http://www.dfo-mpo.gc.ca/aquaculture/business-entreprises/factap-application-patppa-eng.htm>

s.19(1)

**From:** McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>

**Sent:** Thursday, June 27, 2019 1:23 PM

**To:** Choi, Shirley <Shirley.Choi@dfo-mpo.gc.ca>

**Subject:** FW: Tasking//2019-009-00311//SN MIN - Meeting with BC Salmon Farmer's Association - July 2nd 9am FIRM

On Aqua tech – note the recent June 4 Ministerial announcement on a new Working Group

On Area Based Management – note the June 4 announcement on a new working group.

- Minister first announced ABAM approach last fall
- Departmental officials have been meeting with First Nations, particularly the North Island. BCSFA has been provided updated in FAIAP and SWG meetings.
- development of ABAM will include industry and will link to initiatives already underway, like the Broughton LOU process
- ABAM will involve looking at the geographic scale of management activities, links to wild fish and sustainable ecosystems, and engaging Indigenous and local communities at a scale relevant to their interests.

Brenda

Brenda McCorquodale

Regional Manager, Enhanced Sustainability Initiative, Aquaculture Management Division  
Fisheries and Oceans Canada  
Gestionnaire régionale des ressources, Direction des pêches  
Pêches et Océans Canada

1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8  
Email | Courriel: [Brenda.McCorquodale@dfo-mpo.gc.ca](mailto:Brenda.McCorquodale@dfo-mpo.gc.ca)  
Telephone | Téléphone: 250-754-0367

---

**From:** Delaney, Paula  
**Sent:** Thursday, June 27, 2019 11:37 AM  
**To:** Webb, Allison; McCorquodale, Brenda; Paylor, Adrienne; Mollins, Jennifer; Choi, Shirley  
**Subject:** FW: Tasking//2019-009-00311//SN MIN - Meeting with BC Salmon Farmer's Association - July 2nd 9am FIRM

We have been granted an extension for this SN!! DUE IN RDGO July 2<sup>nd</sup> am FIRM Thank you, Paula  
Great news.

**From:** Mauro, Richard <[Richard.Mauro@dfo-mpo.gc.ca](mailto:Richard.Mauro@dfo-mpo.gc.ca)>  
**Sent:** Thursday, June 27, 2019 11:34 AM  
**To:** Delaney, Paula <[Paula.Delaney@dfo-mpo.gc.ca](mailto:Paula.Delaney@dfo-mpo.gc.ca)>; Wilkinson, Davida <[Davida.Wilkinson@dfo-mpo.gc.ca](mailto:Davida.Wilkinson@dfo-mpo.gc.ca)>  
**Subject:** FW: Tasking//2019-009-00311//SN MIN - Meeting with BC Salmon Farmer's Association - July 2nd 9am FIRM

YAY we got an extension!!!!. New due date: July 03, 2:00pm.

**Thank you. Have a great day**

**Richard Mauro**

Correspondence Co-ordinator Fisheries Management  
Fisheries and Oceans Canada | Government of Canada  
[richard.mauro@dfo-mpo.gc.ca](mailto:richard.mauro@dfo-mpo.gc.ca) | Tel: 604.666.0182

Coordonateur de la correspondance de la gestion des pêcheries  
Pêches et Océans Canada | Gouvernement du Canada  
[richard.mauro@dfo-mpo.gc.ca](mailto:richard.mauro@dfo-mpo.gc.ca) | Tel : 604.666.0182

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**From:** PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO)  
**Sent:** June-27-19 9:05 AM  
**To:** Mauro, Richard <Richard.Mauro@dfo-mpo.gc.ca>  
**Cc:** Dickie, Catherine <Catherine.Dickie@dfo-mpo.gc.ca>; PAC RDGExecCorrespondence / ExecCorrespondenceDGRPAC (DFO/MPO) <DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca>  
**Subject:** Tasking//2019-009-00311//SN MIN - Meeting with BC Salmon Farmer's Association - July 2nd 9am FIRM

Hi FM,

The following docket is for processing for the:

Lead: **PAC - FM**  
Input Required From: **PAC-Science**  
GCCMS #: 2019-009-00311  
Routed to : FM & Science  
Background Information:  
Topics will include:

- Sea Lice
- Aquaculture technology
- Broughton

If you believe your group should not take the lead/provide input on this docket, please advise me immediately. If an extension is required on this tasking, please provide rationale, and do not request one on the day the documents are due.

Please submit your documents to RDGO no later than **July 2nd 9am FIRM**

Thank you,

**Rauvyn Johal**

Correspondence Officer | Agente de correspondance  
Regional Director General's Office/Bureau Directeur Général Regional  
Fisheries and Oceans Canada | Pêches et Océans Canada  
Telephone | Téléphone (604) 666-3303  
DFO.PAC\_RDGExecCorrespondence-ExecCorrespondenceDGR\_PAC.MPO@dfo-mpo.gc.ca



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Approved by SADM

Docket #: 2019-009-00311

Security Classification: UNCLASSIFIED

## **SCENARIO NOTE**

### **MEETING WITH BC SALMON FARMERS ASSOCIATION**

#### **Overview**

The BC Salmon Farmers Association (BCSFA) has requested a meeting with you. The purpose of the meeting is to discuss the current status of marine finfish aquaculture in British Columbia (BC) and proposed initiatives with implications for the aquaculture industry across Canada. You last met with the BCSFA on XXXDate to discuss XXXMatter.

The BCSFA was established in 1984, with headquarters in Campbell River, BC. Their stated mission is to "promote opportunities for fish farming in BC by building public understanding and trust".

Membership includes both companies directly producing farmed salmon and companies supplying services and goods to the industry. The Association plays a key liaison role between industry and all levels of government, and has communicated with departmental official and ministerial staff consistently over the years. In addition to the [REDACTED] key Executive members include:

- [REDACTED] Cermaq Canada;
- [REDACTED] Grieg Seafood BC Ltd.;
- [REDACTED] Mowi Canada (previously Marine Harvest Canada);
- and
- [REDACTED] Creative Salmon Co. Ltd.

Your overall objective is to communicate that the Government of Canada recognizes the importance of the aquaculture industry in BC and re-iterate our commitment to continued collaboration with First Nations, the Province and industry to ensure the environmental and economic sustainability of aquaculture operations in BC.

The key issues that may be raised during the meeting are sea lice, aquaculture technology, Broughton Archipelago and the new testing requirements.

#### **Minister's Objectives**

Your overall objective is to acknowledge the concerns of the BCSFA and invite them to provide feedback through the new technical working groups that will be established imminently.

s.19(1)

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## Issues

### 1. Sea Lice

On June 28, 2019, you announced that the Department will be enhancing sea lice management measures in BC. In recent months, several incidents of high sea lice levels above regulatory thresholds had emerged in two areas of the west coast of Vancouver Island. Due to concerns that high sea lice levels may harm juvenile salmon, DFO is taking action to improve regulatory requirements and the farm operator's compliance with the sea lice management.

DFO will be making amendments to the conditions of licence (COL) in advance of the next salmon migration window to improve management while providing additional tools and guidance to industry. These include moving to an area based management (ABM) approach for sea lice consistent with the new approach to aquaculture announced in December 2018. This could include

[REDACTED] An Indigenous and Multi-Stakeholder Advisory Body (IMAB), chaired by the DM of DFO with support from the Fish Health Technical Working Group will be created to advance this initiative.

Salmon farmers have had difficulty using alternative sea lice treatment options in a timely manner, due to the lengthy process of obtaining a permit from the BC Ministry of Environment. BC is proposing to amend the Integrated Pest Management Regulation in response to these concerns; approval is expected at the end of June. DFO continues to work with the province of BC on integrated pest management approaches to diversify tools and test new technologies that can limit potential impacts of sea lice to wild fish.

### Minister's Objectives

Your objective is to confirm our commitment to working with the Industry and other stakeholders to develop improved sea lice conditions of licence that will provide additional tools and guidance to the industry. DFO will also continue to work with our partners on pest management approaches and potential new technologies that can help to address potential impacts of sea lice to wild salmon.

### Key Messages

- **Increasing cases of high sea lice levels on west coast of Vancouver Island is causing concern from the public and environmental groups with regard to how sea lice challenges are handled by DFO; improving management will require changes to the current regulatory approach.**
- **DFO intends to revise the current sea lice conditions of licence before the next wild salmon outmigration window in 2020. We trust that BCSFA will participate in our multi-stakeholder technical working group to improve**

s.21(1)(a)

s.21(1)(b)



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**the sea lice conditions of licence.**

## **2. Aquaculture Technology**

In December 2018 you announced that the Department will coordinate a study on the State of Salmon Aquaculture Technology, as a result of the ongoing interest to minimize environmental impacts related to salmon farming in British Columbia.

This study was led and funded by Fisheries and Oceans Canada, Sustainable Development Technology Canada and the Province of British Columbia; and is guided by an independent Steering Committee. The Study was conducted by Gardner-Pinfold Consulting Inc. in collaboration with an Advisory Committee. The Advisory Committee, includes representatives from the B.C. First Nations Fisheries Council, Tides Canada, the B.C. Salmon Farmers Association, SDTC, the Province of BC and DFO.

The first draft of the report did not meet the expectations of the Advisory Committee due to the lack of detail, level of analysis, and direction on a way forward. A second draft was sent to the Committee on June 21, 2019 for review. The Study is expected to be finalized by the end of summer.

### **Minister's Objective**

Your objective is to recognize the participation of the BCSFA on the Alternative Technology Study and to encourage the Industry to explore the use of alternative technologies in BC based on the recommendations of the Study.

### **Key Messages**

- **We thank the BC Salmon Farmers Association for their participation in the Advisory Committee for the Study. We hope that you will also participate in the new working group focused on aquaculture production technology.**
- **The Study on the State of Salmon Aquaculture Technology will allow a full examination of alternative technologies for salmon aquaculture to enable the sustainable economic growth of the sector.**
- **DFO remains open to exploring different technologies, that can be trialed in BC to better understand the relative benefits of these approaches. Funding for alternative technologies may be possible under the Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) or BC Salmon Restoration and Innovation Fund (BCSRIF) funding programs.**

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### **3. Broughton Archipelago**

On December 14, 2018, the 'Namgis, Kwikwasut'inuxw Haxwa'mis and Mamalilikulla First Nations, and the Province of British Columbia, released their consensus recommendations for finfish aquaculture in the Broughton Archipelago. The recommendations included a plan for a managed closure of 17 farm sites in the area and development of an Indigenous Monitoring and Inspection Program (IMIP) to oversee the operations of the fish farms during the transition of the tenures. The BCSFA and its members view the success of the Broughton process as essential for continued salmon farming on the west coast, and have expressed a desire for DFO participation in these discussions to facilitate alignment of Provincial and Federal regulators.

#### **Minister's Objective**

Your objective is to communicate that the Government of Canada recognizes the importance of the aquaculture industry in BC and re-iterate our commitment to continued collaboration with First Nations, the Province and industry to ensure the environmental and economic sustainability of aquaculture operations in BC.

#### **Key Messages**

- **Aquaculture is an important industry that supports economic growth and job creation, especially in rural, coastal and Aboriginal communities.**
- **We recognize the concerns of First Nations, especially of those in the Broughton archipelago area. We also recognize the challenges that this represents to industry as it relates to the renewal of tenures.**
- **I look forward to working with you to ensure an ongoing environmentally, economically, and socially sustainable salmon farming industry in BC.**

### **4. Interim Management Measures to Enhance Aquaculture Sustainability**

On June 4, 2019, you made a significant announcement regarding a number of initiatives to ensure the environmental sustainability of the aquaculture industry. The announcement included the release of the interim Framework for Aquaculture Risk Management (FARM) and the interim Framework on the Transfer of Live Fish for public consultation, and the requirement to test for heart and skeletal muscle inflammation (HSMI), jaundice syndrome and non-native strains of PRV. Three technical working groups will also be established to provide advice on risk management policy with respect to area based approaches to aquaculture management, aquaculture production technologies and fish health.

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### **Minister's Objective**

Your objective is to communicate that the Department will continue to work with industry, Indigenous partners, other stakeholders and members of the public to arrive at well informed, science based decisions that will enhance the sustainability of aquaculture operations, while protecting wild Pacific salmon stocks. These new initiatives aim to assure Canadians that the salmon farming industry is operating in an environmentally sustainable manner.

### **Key Messages**

- **We value the BCSFA's continued support and involvement with the development of aquaculture policies. We look forward to working with you to implement the new testing requirements and hope to see your participation in the three new Technical Working Groups.**
- **Having a well-defined and transparent risk management framework for aquaculture that explains how the precautionary approach is applied, such as the FARM, will further support the sustainability of the aquaculture sector and directly responds to one of the recommendations made by the Commissioner for Environment and Sustainable Development.**
- **We recognize the challenges that these interim measures may impose on the Industry, however, we anticipate that these initiatives will assure Canadians that the salmon farming industry is operating in an environmentally sustainable manner.**



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GCCMS #: 2019-009-00311  
EKME #: #####

To: Timothy Sargent  
Pour:

Date:

Object: **SCENARIO NOTE: MEETING WITH BC SALMON FARMERS**  
Objet: **ASSOCIATION**

From / Alexandra Dostel, Director General, Aquaculture Management Directorate  
De:

Via: Name of S/ADM, Title

Additional approvals:

Autre(s) approbation(s):

R. Reid, Regional Director General, Pacific Region

<input checked="checked" type="checkbox"/>	Material for the Minister Documents pour le Ministre	<input type="checkbox"/>	Your Signature Votre signature	<input type="checkbox"/>	Information
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Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors: [please list who was consulted internally]

Distribution: *Please indicate name of people to receive a copy and if prior or following the DM approval. (Remove if no Distribution is required)*

Drafting Officer/ Shirley Choi, A/Regional Manager, Aquaculture Programs  
Rédacteur: (604) 666-5783 / A. Webb / A. Thomson / dw

## **Choi, Shirley**

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**From:** Choi, Shirley  
**Sent:** Friday, June 28, 2019 5:16 PM  
**To:** Webb, Allison  
**Cc:** Meadows, Shelley  
**Subject:** Draft Directors of Aquaculture July 18\_2019 Agenda  
**Attachments:** Directors of Aquaculture July 18\_2019.docx

Hi Allison,

I wanted to get this to you for review as well. Here's our proposed agenda for the next DAC meeting. We are still waiting for the harmonized licence application updates, we will update the agenda once we receive it.

Thanks,

## **Shirley Choi**

Regional Program Coordinator | coordinatrice régionale du programme  
Fisheries and Aquaculture Clean Technology Adoption Program | Programme d'adoption des technologies propres pour les pêches  
et l'aquaculture  
Phone | téléphone: (604) 666-5783

**DIRECTORS OF AQUACULTURE COMMITTEE (DAC)**  
**July 18, 2019 – 10:00 AM – 12:00 PM (PDT)**  
**Call-in number: 1-877-413-4781 / Passcode: [REDACTED]**

**AGENDA**

**Chair:** D. Travia / A. Webb

**Participants:** A. Patirana (DFO), A. Paylor (DFO), R. Mayser (FLNR), L. Fettes (FLNR), M. Roth (BCAGRI), R. Greville (TC), T. Graham (BC MOE), V. Vukelich (FLNR), G. Gage (FLNR), C. Doucette (DFO)

**Secretariat:** S. Meadows

**Action Items**

- DFO to set up a Federal/Provincial meeting examining options on how First Nations interests related to geoduck can be accommodated *ongoing*
- DFO to provide DAC members with a copy of the 2017 Marine Finfish Drugs/Pesticides report. *complete*
- BC to set up a call with DFO after document outlining operational implications of June 20<sup>th</sup> announcement is shared. *Ongoing*
- Arrange a meeting with BC (D. Travia) to review updates to the BC Land Act policy. *ongoing*

AGENDA		
	ITEM	LEAD
1.	Review agenda	A.Webb /D. Travia
2.	Review of Action Items	A.Webb /D. Travia
3.	Provincial Update	D. Travia and FLNRO/MOE
4.	Federal Update	A. Webb
5.	High-risk shellfish issues <ul style="list-style-type: none"> <li>1. Bivalve Traceability Initiative</li> <li>2. Shellfish Aquaculture Marine Plastics and Debris</li> </ul>	A. Webb/C. Doucette
6.	Broughton Archipelago Process Update	D. Travia
7.	Federal Updates on: <ul style="list-style-type: none"> <li>1. Technical Working Groups</li> <li>2. Alternative Technology Study</li> <li>3. Sea Lice COL Update</li> </ul>	A. Webb

AGENDA		
	ITEM	LEAD
8.	Litigation Update	A. Webb
9.	Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP)	A. Webb
10.	Roundtable	All

### Harmonized Licence Application Status as of July 1, 2019

Sector	PRT		UNDER REVIEW					
			New Applications			Amendments		TOTAL
	Received (Under Review)	Accepted (waiting official referral from BC)	Under review	On Hold *	Pre-service standards **	Under review	On Hold*	
Marine Finfish								
Shellfish								
Freshwater/ Land-based								
Rec Stocking								
Total								

#### NOTES:

\* The review of the application is "Paused" due to circumstances outside the Department controls.

\*\* Applications received prior to May 2015 are not subject to service standards.